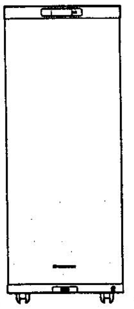
PIONEER
The Art of Entertainment

Service Manual



ORDER NO.
RRV1392

CD AUTO CHANGER
CAC-V5000
CD PLAYER
PD-CACV5000

THIS MANUAL IS APPLICABLE TO THE FOLLOWING MODEL(S) AND TYPE(S).

Type	Model		Power Requirement	The voltage can be converted by the following method.
	CAC–V5000	PD–CACV5000		
EUCG8	○	–	AC120V/220V/230V/240V	With the voltage selector
–	–	○	DC power supply from other system	————————

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1. SAFETY INFORMATION

**This service manual is intended for qualified service technicians; it is not meant for the casual do-it-yourselfer. Qualified technicians have the necessary test equipment and tools, and have been trained to properly and safely repair complex products such as those covered by this manual.
Improperly performed repairs can adversely affect the safety and reliability of the product and may void the warranty. If you are not qualified to perform the repair of this product properly and safely, you should not risk trying to do so and refer the repair to a qualified service technician.**

WARNING
Lead in solder used in this product is listed by the California Health and Welfare agency as a known reproductive toxicant which may cause birth defects or other reproductive harm (California Health & Safety Code, Section 25249.5).
When servicing or handling circuit boards and other components which contain lead in solder, avoid unprotected skin contact with the solder. Also, when soldering do not inhale any smoke or fumes produced.

NOTICE
(FOR CANADIAN MODEL ONLY)
Fuse symbols -▮▭⊞- (fast operating fuse) and/or -▮▭⊠- (slow operating fuse) on PCB indicate that replacement parts must be of identical designation.

REMARQUE
(POUR MODÈLE CANADIEN SEULEMENT)
Les symboles de fusible -▮▭⊞- (fusible de type rapide) et/ou -▮▭⊠- (fusible de type lent) sur CCI indiquent que les pièces de remplacement doivent avoir la même désignation.

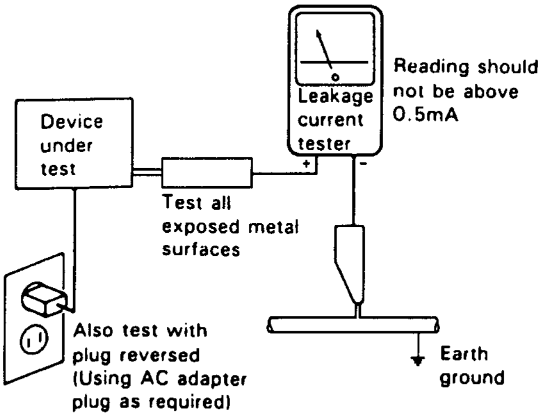
(FOR USA MODEL ONLY)

1. SAFETY PRECAUTIONS

The following check should be performed for the continued protection of the customer and service technician.

LEAKAGE CURRENT CHECK

Measure leakage current to a known earth ground (water pipe, conduit, etc.) by connecting a leakage current tester such as Simpson Model 229-2 or equivalent between the earth ground and all exposed metal parts of the appliance (input/output terminals, screwheads, metal overlays, control shaft, etc.). Plug the AC line cord of the appliance directly into a 120V AC 60Hz outlet and turn the AC power switch on. Any current measured must not exceed 0.5mA.


Device under test
Leakage current tester
Reading should not be above 0.5mA
+
-
Test all exposed metal surfaces
Also test with plug reversed (Using AC adapter plug as required)
Earth ground

AC Leakage Test

ANY MEASUREMENTS NOT WITHIN THE LIMITS OUTLINED ABOVE ARE INDICATIVE OF A POTENTIAL SHOCK HAZARD AND MUST BE CORRECTED BEFORE RETURNING THE APPLIANCE TO THE CUSTOMER.

2. PRODUCT SAFETY NOTICE

Many electrical and mechanical parts in the appliance have special safety related characteristics. These are often not evident from visual inspection nor the protection afforded by them necessarily can be obtained by using replacement components rated for voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in this Service Manual.

Electrical components having such features are identified by marking with a △ on the schematics and on the parts list in this Service Manual.
The use of a substitute replacement component which dose not have the same safety characteristics as the PIONEER recommended replacement one, shown in the parts list in this Service Manual, may create shock, fire, or other hazards.

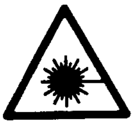
Product Safety is continuously under review and new instructions are issued from time to time. For the latest information, always consult the current PIONEER Service Manual. A subscription to, or additional copies of, PIONEER Service Manual may be obtained at a nominal charge from PIONEER.

(FOR EUROPEAN MODEL ONLY)

VARO!
AVATTAESSA JA SUOJALUKITUS OHITETTAESSA OLET ALTTIINA NÄKYMÄTTÖMÄLLE LASERSÄTEILYLLE. ÄLÄ KATSO SÄTEESEEN.

ADVERSEL:
USYNLIG LASERSTRÅLING VED ÅBNING NÅR SIKKERHEDSAFBRYDERE ER UDE AF FUNKTION. UNDGÅ UDSAETTELSE FOR STRÅLING.

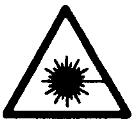
VARNING!
OSYNLIG LASERSTRÅLNING NÄR DENNA DEL ÄR ÖPPNAD OCH SPÄRREN ÄR URKOPPLAD. BETRAKTA EJ STRÅLEN.


LASER
Kuva 1
Lasersateilyn varoitusmerkki

WARNING!
DEVICE INCLUDES LASER DIODE WHICH EMITS INVISIBLE INFRARED RADIATION WHICH IS DANGEROUS TO EYES. THERE IS A WARNING SIGN ACCORDING TO PICTURE 1 INSIDE THE DEVICE CLOSE TO THE LASER DIODE.

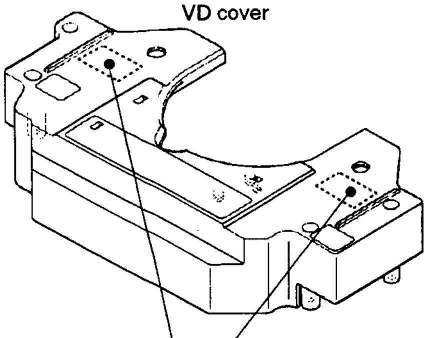
IMPORTANT
THIS PIONEER APPARATUS CONTAINS LASER OF CLASS 1.
SERVICING OPERATION OF THE APPARATUS SHOULD BE DONE BY A SPECIALLY INSTRUCTED PERSON.

LASER DIODE CHARACTERISTICS
MAXIMUM OUTPUT POWER: 5 mw
WAVELENGTH: 780-785 nm

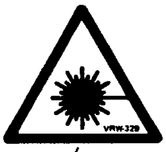

LASER
Picture 1
Warning sign for laser radiation

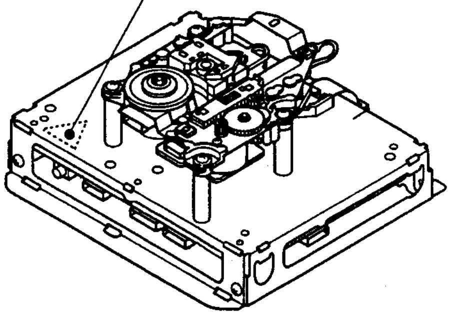
LABEL CHECK

VD cover



CLASS 1 LASER PRODUCT
LASER KLASSE 1
ORW1129

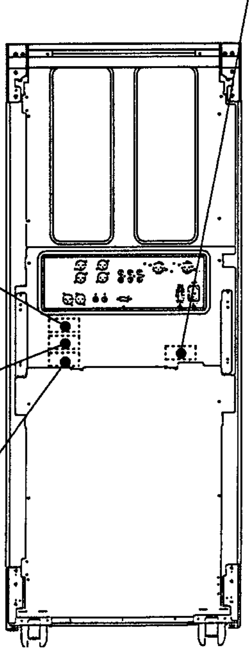



CD player unit

CAUTION
INVISIBLE LASER
RADIATION WHEN OPEN,
AVOID EXPOSURE
TO BEAM
PRW1018

ADVARSEL
USYNLIG LASERSTRÅLING VED ÅBNING NÅR SIKKERHED SAFBRYDERE ER UDE AF FUNKTION.
UNDGÅ UOSÆTTELSE FOR STRÅLING.
VORSICHT!
UNSICHTBARE LASER-STRAHLUNG TRITT AUS, WENN DECKEL (ODER KLAPPE) GEÖFFNET IST! NICHT DEM STRAHL AUSSETZEN!
VRW1094

VARO!
Avattaessa ja suojalukitus ohitettaessa olet alttiina näkymättömälle lasersäteilylle. Älä katso säteeseen.
VARNING!
Osynlig laserstrålning när denna del är öppnad och sparren är urkopplad. Betrakta ej strålen.
VRW1297·A


Rear view

Additional Laser Caution

1. The ON/OFF (ON : low level, OFF : high level) status of the $\overline{\text{CLMPE}}$ signals for detecting the loading state are detected by the drive CPUs, and the design prevents laser diode oscillation when the $\overline{\text{CLMPE}}$ signal turns OFF.
   In normal operation, if no disc is clamped, the laser diode oscillation is disabled.
   However, the interlock does not always operate in the test mode. ∗
2. When the door or cover is opened, close viewing of the objective lens with the naked eye will cause exposure to a Class 1 laser beam.

∗ : Refer to pages 118 and 119.

2. PACKING, EXPLODED VIEWS AND PARTS LIST

NOTES:

- *Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *Parts marked by "◉" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.*

2.1 PACKING

(1) AUTO CHANGER SECTION

Parts List

Mark	No.	Description	Part No.
	1	Cord with plug	DDE1094
	2	Key assy	DXC1002
	3	Polyethylene bag	Z21 - 038
	4	Mirror mat sheet	DHL1050
	5	Support plate	DNE1272
	6	Packing case	DHG1666
	7	Screw (A) assy	RXA1612
NSP	8	Follow up card	DRY1032
NSP	9	Vinyl bag	DHL1011
	10	Packing sheet	RHC1052
	11	Packing sheet	RHC1023
	12	Polyethylene bag	DHL1097
	13	PP joint	AHG - 204
	14	Screw	AMZ40P080FZK
	15	Operating instructions (English/French/Italian/Dutch)	DRB1190
	16	Pad (upper)	DHA1344
	17	Pad (under)	RHA1133
	18	Rack cushion	RHA1134
	19	Rear pad	DHA1345

(2) DISC MAGAZINE ASSY SECTION

Parts List

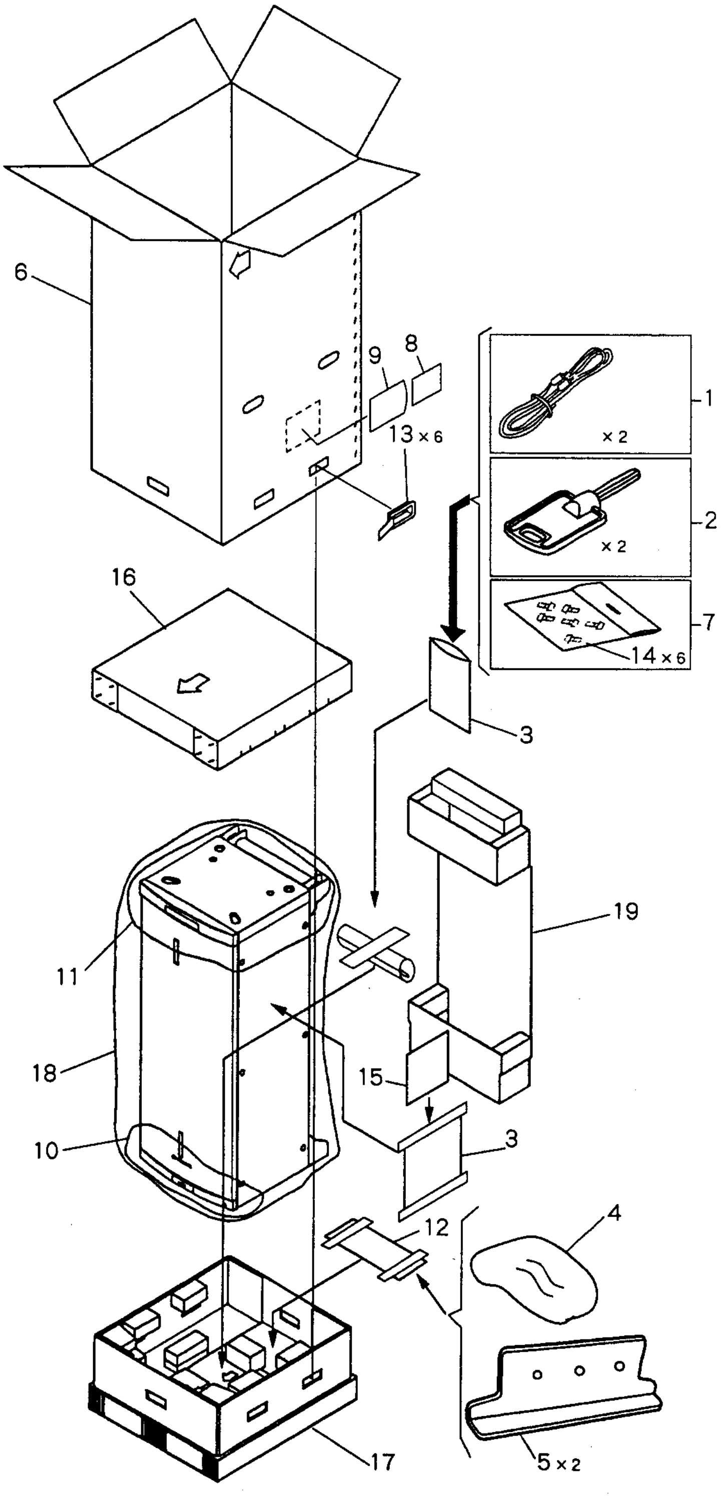
Mark	No.	Description	Part No.
	1	Rack cushion	RHA1134
	2	Packing sheet	RHC1023
	3	Rack packing case spacer	RHC1045
	4	Rack packing case cushion	DEC1816
	5	Rack master spacer	RHC1046
	6	Rack packing case	DHG1674
	7	Master carton	DHG1673
	8	Shipping plate	DNK2980

(3) CD PLAYER for Service

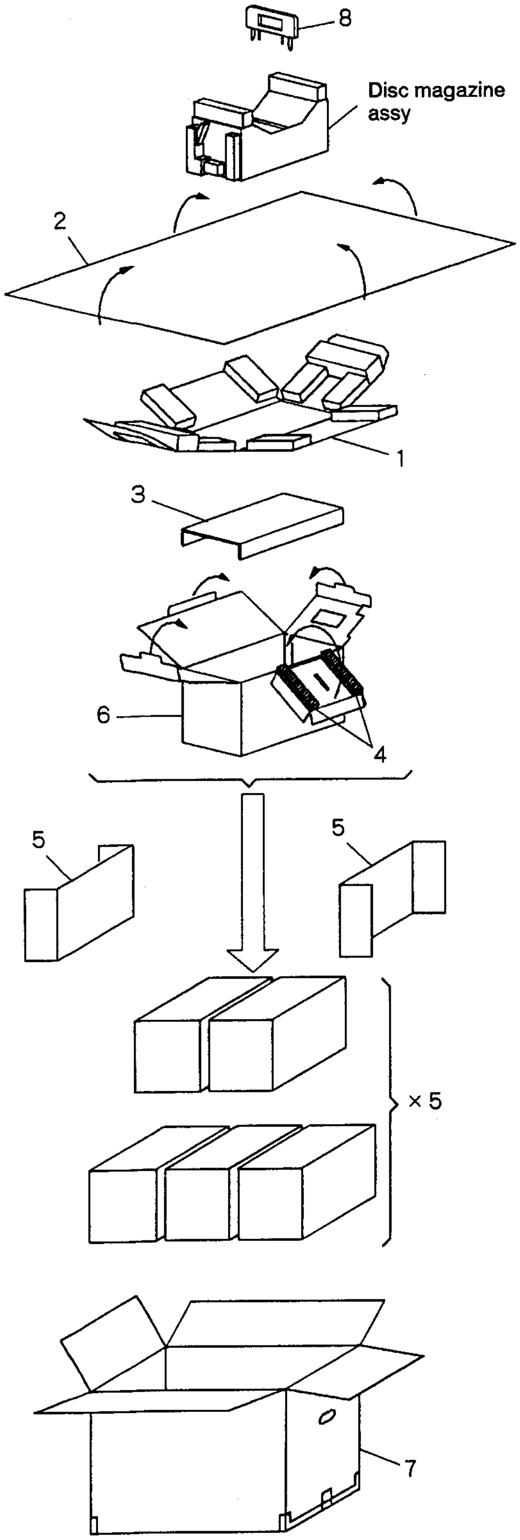
Parts List

Mark	No.	Description	Part No.
	1	CD player (for service)	DXX2276
	2	Pad (upper)	DHA1295
	3	Pad (under)	DHA1296
	4	Packing case	DHG1614
NSP	5	Polyethylene bag	PHL1069

• AUTO CHANGER SECTION



• DISC MAGAZINE ASSY SECTION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Disc magazine assy
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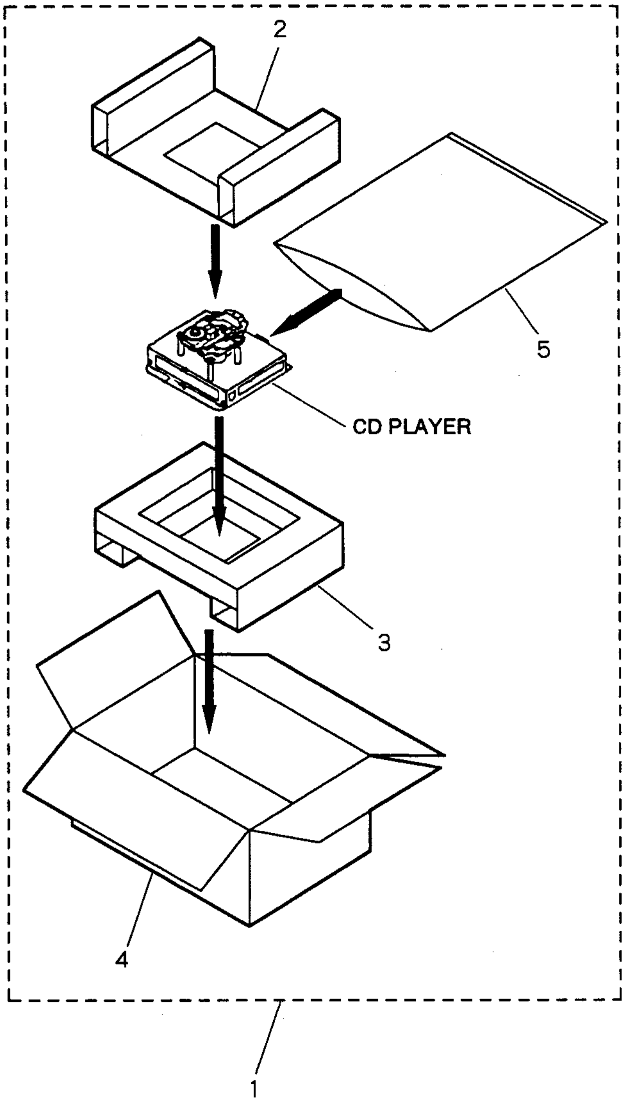
• CD PLAYER for Service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CD PLAYER
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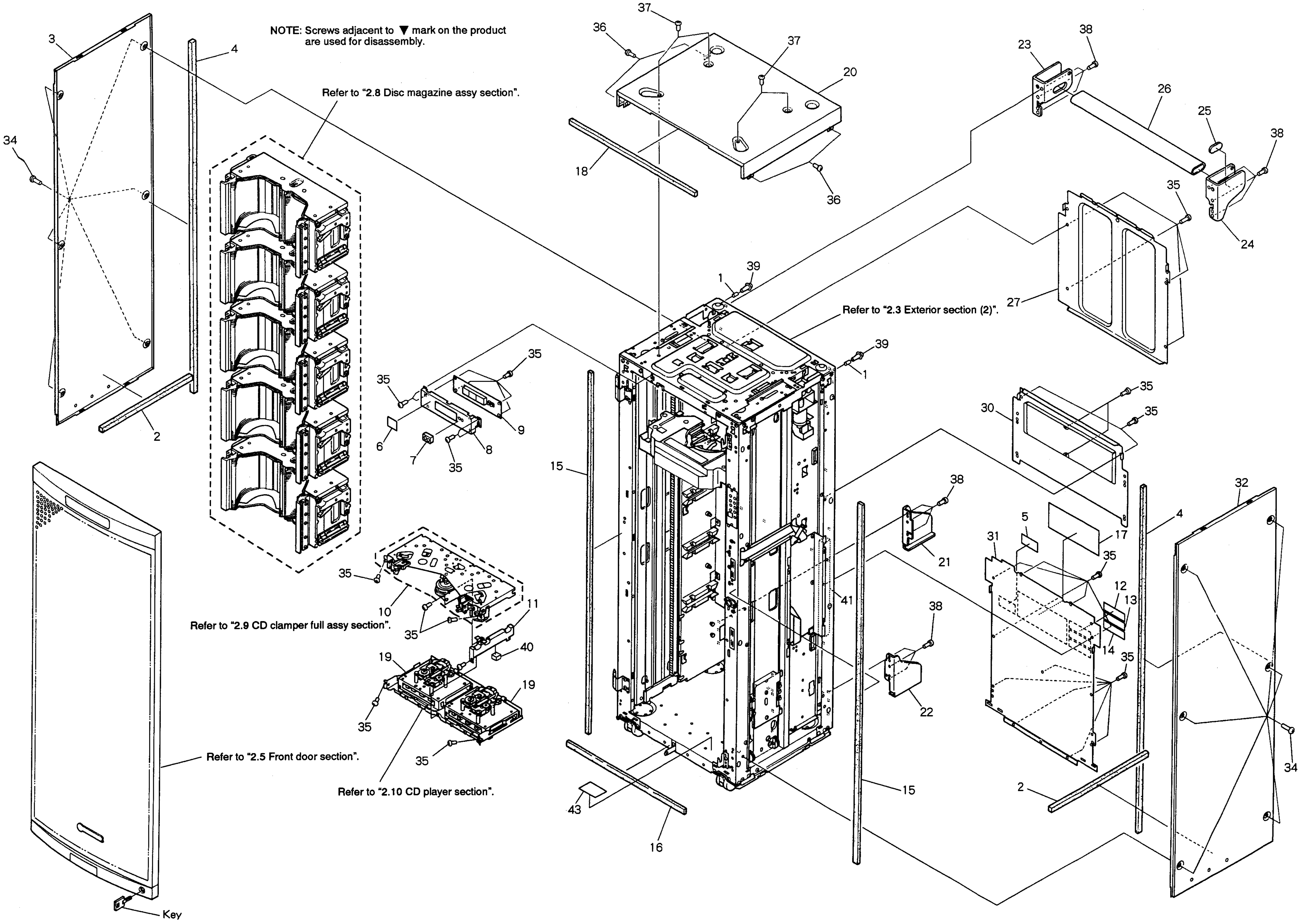
2.2 EXTERIOR SECTION (1)

Parts List

Mark	No.	Description	Part No.
NSP	1	Spacer	RLA1285
	2	Cushion B	DEC1813
	3	Side plate L	DNH2092
	4	Cushion A	DEC1812
	5	Caution label	ORW1129
	6	PL label	DRW1586
	7	LED packing	DEC1819
	8	Indicator bracket	RNE1667
	9	LEDB unit	RWZ3073
	10	CD clamper full assy	RXX1616
NSP	11	Center stay S assy	RXA1620
	12	Caution label	PRW1018
	13	Caution label	VRW1094
NSP	14	Caution label HE	VRW1297
	15	Door packing L	DEC1810
	16	Door packing B	DEC1811
NSP	17	Model label	DAL1104
	18	Door packing T	DEC1815
NSP	19	CD player unit	PD-CACV5000
	20	Top plate	DNH2091
	21	Fall protector L	DNE1267
	22	Fall protector R	DNE1268
	23	Handle holder L	DNE1265
	24	Handle holder R	DNE1266
	25	Cushion	DEB1016
NSP	26	Handle pipe	RLA1240
	27	Rear plate (upper)	RNE1689
	28	• • • • •	
	29	• • • • •	
	30	Rear plate (center)	DNC1404
	31	Rear plate (under)	RNE1691
	32	Side plate R	DNH2093
	33	• • • • •	
	34	Screw	BBT40P080FZK
	35	Screw	BBZ30P060FMC
	36	Screw	BBT30P080FZK
	37	Screw	AMZ40P060FZK
	38	Screw	ABZ40P100FMC
	39	Screw	IBZ30P120FCU
NSP	40	Cord stopper	DEB1099
NSP	41	Protect tube	RDM1005
	42	• • • • •	
NSP	43	History label	VRW-348



NOTE: Screws adjacent to ▼ mark on the product are used for disassembly.

Refer to "2.8 Disc magazine assy section".

Refer to "2.3 Exterior section (2)".

Refer to "2.9 CD clamper full assy section".

Refer to "2.5 Front door section".

Refer to "2.10 CD player section".

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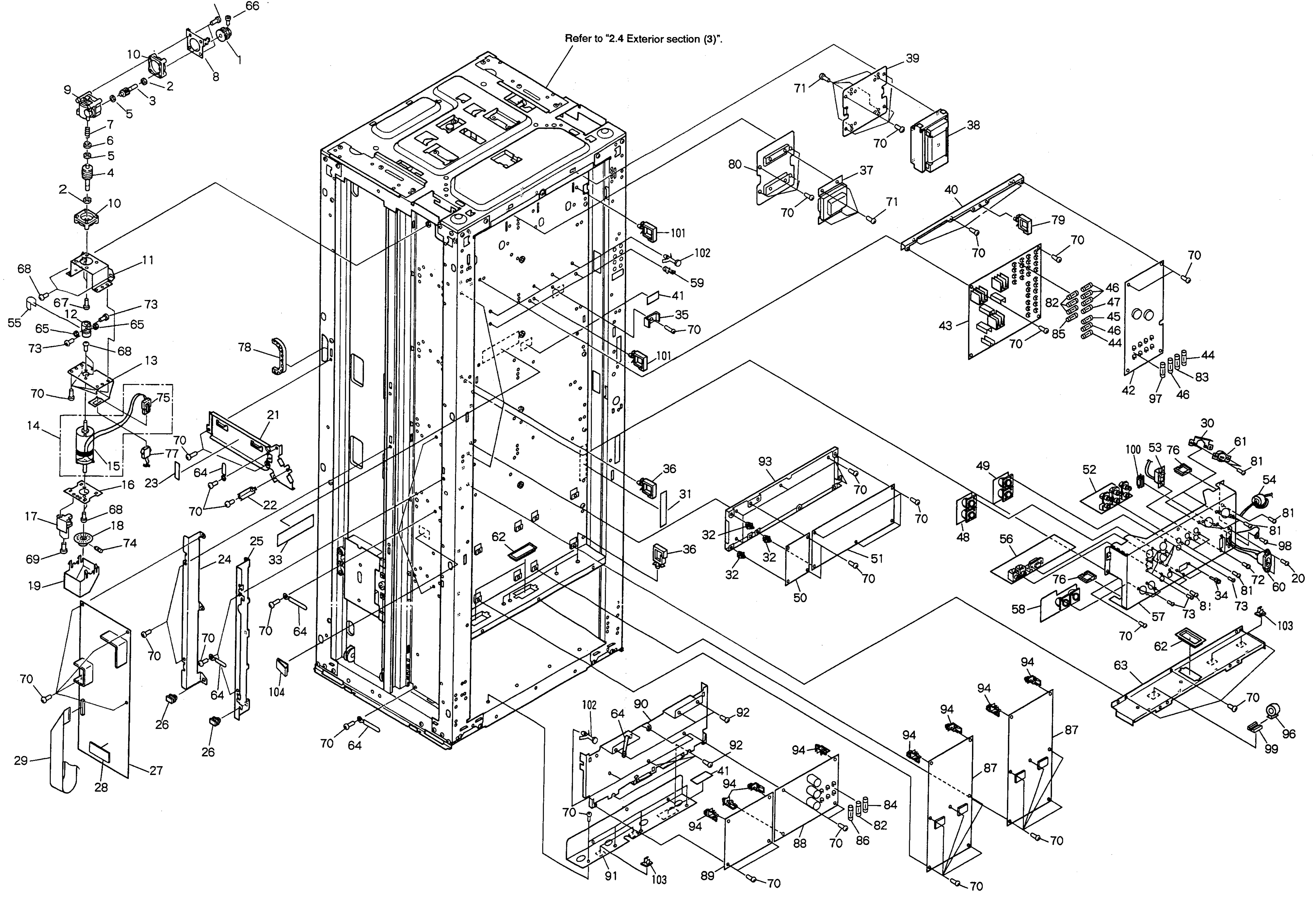
2.3 EXTERIOR SECTION (2)


Refer to "2.4 Exterior section (3)".
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Parts List

Mark	No.	Description	Part No.
	1	VD pulley A	DNK3107
	2	Bearing	DXB1027
	3	Warm wheel assy	RLA1224
	4	Warm assy	RLA1199
	5	Bearing	DXB1026
	6	Bearing holder	DLA1418
	7	GB spring	DBH1148
NSP	8	Gear box stay	RNE1693
NSP	9	Gear box	DNS1181
	10	Flange	DNK3062
NSP	11	VD motor stay A	RNE1716
	12	Cup ring	DNK1043
NSP	13	VD motor stay B	RNE1631
	14	VD motor assy (for service)	RXX1613
	15	VD motor	DXM1025
	16	VME plate	DNH1268
NSP	17	ENCB unit	RWZ3070
	18	Encoder disc assy	DXB1160
	19	Motor cover	RNK2068
	20	Screw	BBZ30P080FZK
	21	Flexible cord guide	RNE1637
	22	Flexible cord holder	RNE1629
NSP	23	Mechanism sheet (cloth)	VEX1024
NSP	24	CMEC stay L	RNE1664
NSP	25	CMEC stay R	RNE1665
NSP	26	P plate holder	PNY-405
	27	CMEC unit	DWM1524
	28	64kB program ROM (IC207)	DYW1501
	29	Flexible cord B	RDD1294
	30	SW install plate	VNE1211
	31	ICP caution label	DRW1384
NSP	32	Piercing hold	DEC1230
	33	65 label	ORW1069
	34	Joint bolt #4-40/M3	DBA1038
	35	F clamp holder	DEC1266
NSP	36	Locking wire saddle	DEC1717
⚠	37	Power transformer (T102)	DTT1129
⚠	38	Power transformer (T101)	DTT1128
	39	Trans. stay	RNE1678
NSP	40	PSSB stay (upper)	RNE1674
NSP	41	Fuse caution label	RRW-111
	42	PSPB unit	DWR1238
	43	PSSB unit	DWR1237
⚠	44	Fuse (FU104, FU115 : T800mA)	REK1021
⚠	45	Fuse (FU113 : T2.5A)	REK1026
⚠	46	Fuse (FU102, FU106, FU108, FU110, FU114 : T1.6A)	REK1024
⚠	47	Fuse (FU112 : T6.3A)	REK1030
	48	XLR1 unit	DWX1658
	49	XLR2 unit	DWX1659
	50	ACNB unit	DWX1652
	51	ANLG unit	DWX1657
	52	AUOB unit	DWX1651
⚠	53	POWER switch	DSA1012

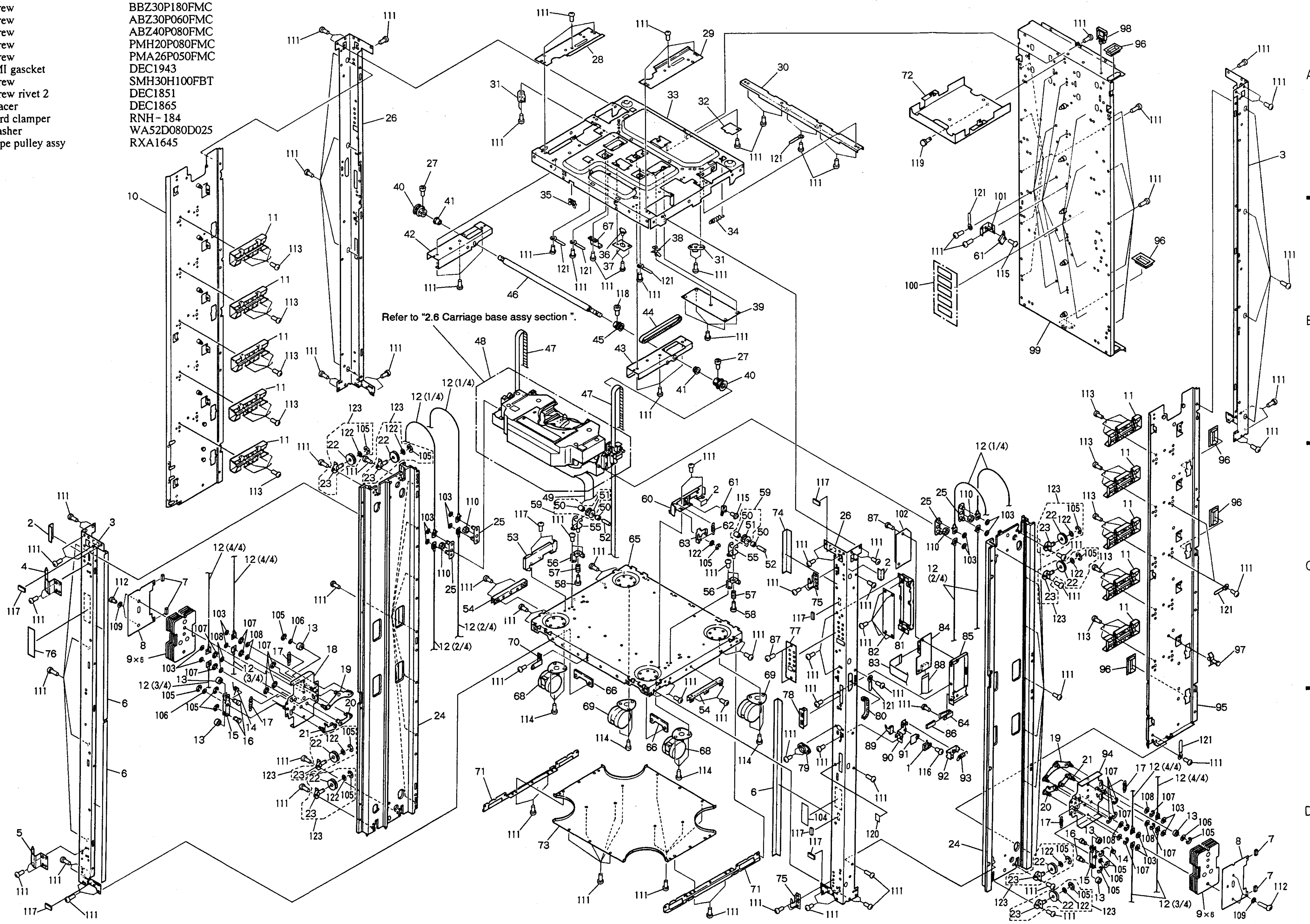
Mark	No.	Description	Part No.
NSP	54	Ferrite clamp	DTH1167
NSP	55	Wrap cloth	DED1089
	56	CNCT unit	DWX1649
	57	Rear panel	DNC1403
	58	DXLR unit	DWX1650
NSP	59	Piercing hold	DEC1703
⚠	60	Inlet assy 3p	DKN1132
⚠	61	Rotary volt. selector switch	DSB1012
NSP	62	Protector	DNK1340
NSP	63	Shield stay	RNE1731
	64	Cord clamper	RNH-184
	65	Nut	NB26FMC
	66	Pulley fixing screw	DBA1089
	67	Screw	AMZ30P160FMC
	68	Screw	AMZ30P060FMC
	69	Screw	AMZ20P060FMC
	70	Screw	BBZ30P060FMC
	71	Screw	BMZ40P060FMC
	72	Screw	PMH30P080FMC
	73	Screw	PMZ26P080FMC
	74	Screw	ZMD26H030FBT
	75	Connector assy 2P	RKP1585
	76	Edge guard A	DEC1143
NSP	77	Connector assy 2P	RKP1584
NSP	78	Edge guard B	REC1226
NSP	79	Wire saddle	DEC1450
	80	Trans. stay	DNH2089
	81	Screw	BBZ30P080FMC
⚠	82	Fuse (FU105, FU107, FU109, FU117 : 1.6A)	REK1077
⚠	83	Fuse (FU103 : 1.25A)	REK1058
⚠	84	Fuse (FU118 : 4A)	REK1082
⚠	85	Fuse (FU111 : 8A)	REK1086
⚠	86	Fuse (FU116 : 800mA)	VEK1013
	87	DACB unit	DNM1410
	88	DGIF unit	DWX1656
	89	DAIF unit	DWX1648
	90	DGIF stay U	DNH2087
	91	DGIF stay D	DNH2088
	92	Screw	IBZ30P060FMC
	93	ANLG stay	DNH2085
	94	Card edge spacer (10)	DEC1885
	95	Edge cover	DEC1891
NSP	96	Ferrite clamp	DTH1167
⚠	97	Fuse (FU101 : 1.6A)	REK1060
	98	Screw	PMB40P080FMC
	99	F clamp holder	DEC1625
	100	Edge guard	DEC1155
NSP	101	Wire saddle (8S)	DEC1760
	102	Card spacer	DEC1770
	103	Cord clamp L	DEC1578
	104	Flat cable clamp	DEC1850

2.4 EXTERIOR SECTION (3)

Parts List

Mark	No.	Description	Part No.
	1	Lever switch	DSK1003
NSP	2	Mechanism sheet (cloth)	VEX1024
	3	Corner frame A	RNE1657
	4	Door hinge assy	RXA1595
	5	Door hinge assy B	RXA1619
NSP	6	Edge guard L	REC1206
	7	Weight guide	RNK1937
NSP	8	Weight cover	RNE1622
NSP	9	Weight	RNE1615
NSP	10	Side plate L assy	RXA1588
	11	Rack rail	RNK1981
	12	Wire assy	RXA1570
	13	Weight roller	RNK2083
	14	Roller spring	RBH1374
	15	Roller support	RNE1623
	16	Roller pin	RLA1273
	17	W spring	RBH1344
	18	Weight holder L assy	RXA1567
NSP	19	EQ stay assy	RXA1569
NSP	20	Hook lever L assy	RXA1591
NSP	21	Hook lever R assy	RXA1592
	22	Rope pulley	DNK1841
	23	Rope plate assy	DXB1258
NSP	24	Side rail assy	RXA1587
	25	Wire support assy	RXA1572
	26	Corner frame B	DNH2000
	27	Pulley fixing screw	DBA1086
NSP	28	SR plate L	RNE1686
NSP	29	SR plate R	RNE1687
NSP	30	Upper stay	RNE1640
	31	Tap plate	RNE1745
NSP	32	SSAB unit	RWZ3077
NSP	33	Upper chassis	RNE1644
	34	Gear box spring	RBH1370
NSP	35	Edge saddle	DEC1498
	36	Lamp	DEL1019
NSP	37	LAMP unit	RWZ3075
NSP	38	WL spacer	ONK1047
	39	SSDC unit	RWZ3074
	40	VD pulley A	DNK3107
	41	Bearing	DXB1544
NSP	42	VD stay L	RNE1641
NSP	43	VD stay R	RNE1642
	44	Timing belt S	REB1230
NSP	45	VD pulley B	RNK1934
NSP	46	VD shaft	RLA1235
	47	Timing belt L	REB1229
NSP	48	Carriage base assy	DXA1778
	49	Flexible cord A	RDD1293
	50	VD bush	DNK1895
	51	VD pulley 2	DNK1809
	52	VD shaft 3	DLA1409
NSP	53	Limit stay L	RNE1659
	54	Sub plate	RNE1768
	55	VD bolt 3 assy	DXB1254
	56	VD holder assy	RXA1585
	57	VD spring 4	DBH1139
	58	Tension nut assy	DXB1560
	59	VD pulley 2 assy	DXX1525
	60	Limit stay R assy	RXA1593
	61	Slide switch	VSK1003
	62	Limit SW spring	RBH1346
	63	Limit SW metal	RNE1649
	64	Flat cable clamp	DEC1850
NSP	65	Under chassis assy	RXA1584
	66	Spacer A	REB1258
NSP	67	Harness guide	RNE1712
	68	Caster (S)	RXA1601
	69	Caster	RXA1442
	70	Hook plate	RNE1796
NSP	71	Under angle	RNE1704
NSP	72	PCB cover	RNE1705
	73	Bottom plate	RNE1636
	74	Edge guard S	REC1242
	75	Door hook	RNE1663
	76	Flexible cord caution label	DRW1710
	77	Display plate	DAH1789
	78	Magnet catch	REX1002
	79	Door guide	DNK3065
NSP	80	Edge guard B	REC1226
NSP	81	Function board stay	RNE1680
	82	KEYB unit	RWZ3072
	83	Flexible cord B	RDD1294
NSP	84	FCNB unit	RWZ3069
NSP	85	Flexible metal	RNE1647
NSP	86	Flexible cushion	REB1255
	87	Nylon rivet	RBM-003
	88	Flexible cord A	RDD1293
	89	Cord keep	DNH1285
	90	Door SW plate A	RNE1684
	91	Insulation plate	DEC1313
	92	Door SW plate B	RNE1685
	93	Door SW spring	RBH1369
	94	Weight holder R assy	RXA1568
NSP	95	Side plate R assy	RXA1589
NSP	96	Protector	DNK1340
NSP	97	Card spacer	DEC1823
NSP	98	Locking wire saddle	DEC1717
	99	Rack plate assy	DXB1566
	100	Address label	DRW1687
	101	Rack sw plate	RNE1682
	102	Connection PCB cover	DEC1886
	103	Washer	WT26D047D050
	104	Interlock SW caution	DRW1467
	105	E ring	YE30FUC
	106	Washer	WA42D080D050
	107	E ring	YE40FUC
	108	Washer	WA62D095D050
	109	Washer	WS30FMC
	110	Nut	NN30FUC

Mark	No.	Description	Part No.
	111	Screw	BBZ30P060FMC
	112	Screw	BBZ30P180FMC
	113	Screw	ABZ30P060FMC
	114	Screw	ABZ40P080FMC
	115	Screw	PMH20P080FMC
	116	Screw	PMA26P050FMC
	117	EMI gascket	DEC1943
	118	Screw	SMH30H100FBT
	119	Screw rivet 2	DEC1851
	120	Spacer	DEC1865
	121	Cord clamper	RNH - 184
	122	Washer	WA52D080D025
	123	Rope pulley assy	RXA1645


Refer to "2.6 Carriage base assy section ".
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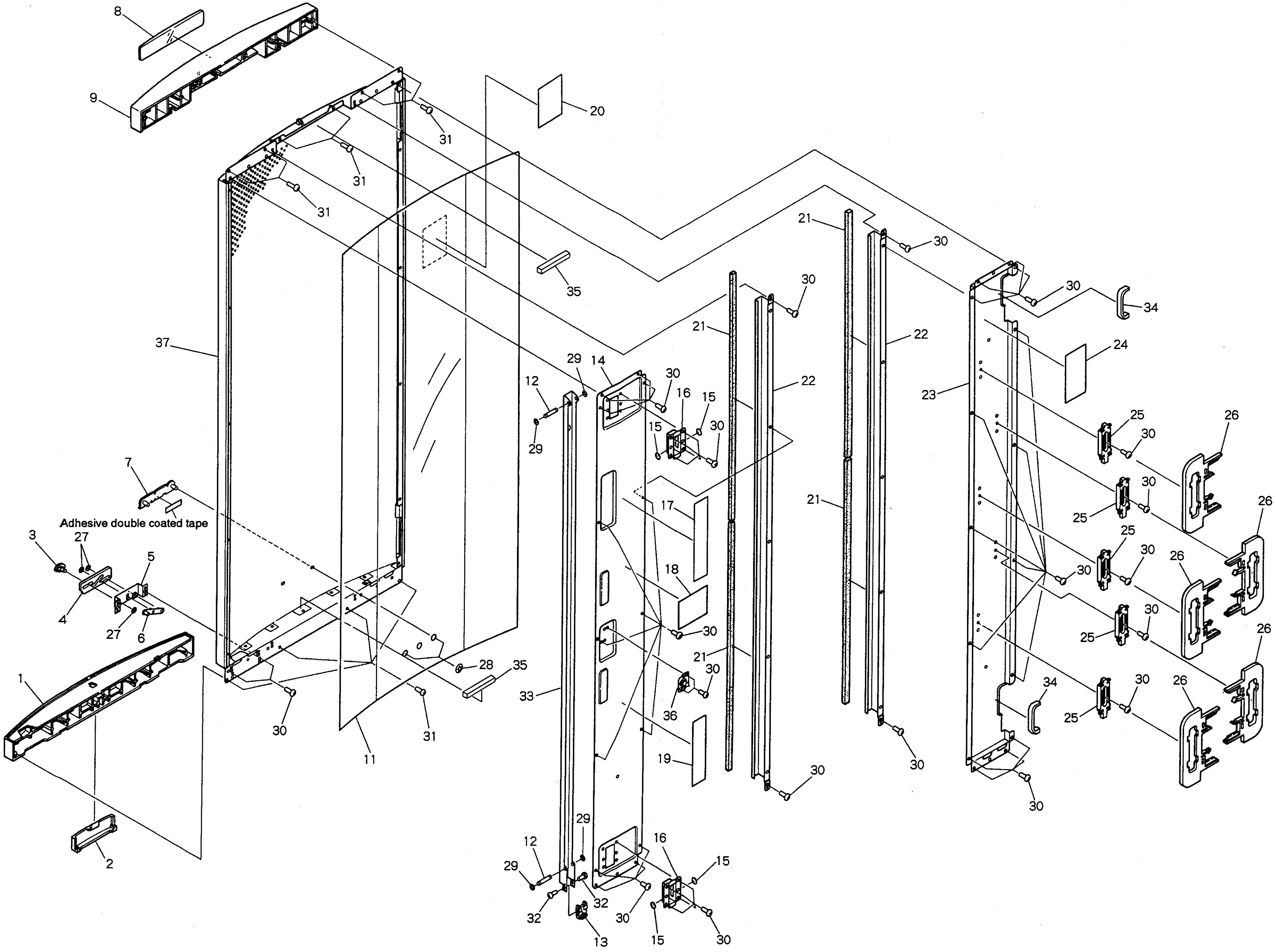
2.5 FRONT DOOR SECTION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Parts List

Mark	No.	Description	Part No.
	1	Under panel	DNK3185
	2	Ceiling cover	DNK3186
	3	Lock gear	RNG1061
	4	Lock cam plate	RNK2008
	5	Lock base	RNE1709
	6	Lock arm assy	DXB1549
	7	Pioneer badge	RAM1005
	8	Display window	RNK1987
	9	Upper panel	DNK3184
	10	• • • • •	
	11	Door sheet	DEC1890
	12	Lock shaft	RLA1232
	13	Link holder	RNK2009
NSP	14	Door cover R	RNE1671
	15	LD pad (large)	VEC1472
	16	Lock holder	RNE1662
	17	Operation guide label	DRW1707
	18	Disc stocker guide label	DRW1582
	19	Error code guide label	DRW1709
	20	Service mode guide label	DRW1708
	21	Panel cushion	DEC1814
NSP	22	Door stay	RNE1668
NSP	23	Door cover L	RNE1670
	24	Shipping P guide label	DRW1585
	25	Shipping holder	RNK2000
	26	Shipping plate (ROM)	DNK2980
	27	Washer	WT31D054D050
	28	Washer	YP40FBT
	29	Washer	WT41D065D050
	30	Screw	BBT30P080FZK
	31	Screw	BPZ30P080FCU
	32	Screw	BPZ30P060FCU
	33	Link plate	RNE1711
	34	Door packing C	DEC1817
	35	Door packing A	DEC1818
	36	Door holder assy	DXB1541
NSP	37	Front panel assy	DXA1772

2.6 CARRIAGE BASE ASSY SECTION

Parts List

Mark	No.	Description	Part No.
	1	VD label (A) ROM	DRW1595
	2	VD cover	DNK3046
	3	VD shutter	RNK2011
	4	VD shutter SP	RBH1371
	5	Caution label	PRW1018
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	14	Switch lever	RNK2022
	15	Carriage plate spring	RBK1055
	16	SW gear stay	DNH1768
	17	SW cam gear	RNK1944
	18	S2M pulley S	DNK1389
	19	Motor stay 2	RNE1794
	20	Loading motor	VXM1048
	21	Warm stay	RNK2054
	22	S2M timing belt	DMS1006
	23	S2M pulley L	DNK1390
	24	Warm gear S	DLA1270
	25	SWSB unit	RWZ3131
	26	SW gear 2	DNK1843
	27	SW warm wheel	DNK1842
NSP	28	Locking wire saddle	DEC1305
	29	Bearing	RNX1004
	30	Bearing shaft	RLA1289
	31	H spring 2	RBH1396
	32	H plate 1	DNH1412
	33	H1 spring	DBH1136
	34	CNNB stay	RNE1625
NSP	35	CNNB unit	RWZ3065
NSP	36	Cushion	VEC1489
	37	Carriage base assy	RXA1566
	38	Screw	RBA1110
	39	Belt stopper (L)	RNK1935
	40	TRKG spring	VBH1204
	41	Sensor spring	RBH1345
	42	Lock screw	DBA1081
	43	Sensor stay (A)	RNE1617
	44	LVDN unit	RWZ3061
	45	Sensor holder spring	RBK1050
	46	Sensor stay (B) assy	RXA1571
	47	LVUP unit	RWZ3060
	48	Retainer	DNK1849
	49	Steel ball	VNX1006
	50	Turn table assy	RXA1576

Mark	No.	Description	Part No.
	51	RVDN unit	RWZ3063
	52	RVUP unit	RWZ3062
	53	Belt stopper (R)	RNK1936
	54	Bearing	DXB1283
	55	Bearing	DXB1231
	56	SW inducer	DNK1847
	57	SW follower	DNK2734
	58	SW arm	RNG1057
	59	Swing full assy (for service)	RXX1609
NSP	60	VCNB unit	RWZ3059
	61	Flat cable clamp	REC1202
	62	Cord clamper	RNH-184
	63	E ring	YE25FUC
	64	Washer	WT26D047D050
	65	Washer	WA41D065D025
	66	Washer	WC40S
	67	Screw	PMH30P080FMC
	68	Screw	IBZ20P060FMC
	69	Screw	BPZ30P080FCU
	70	Screw	PMB30P140FMC
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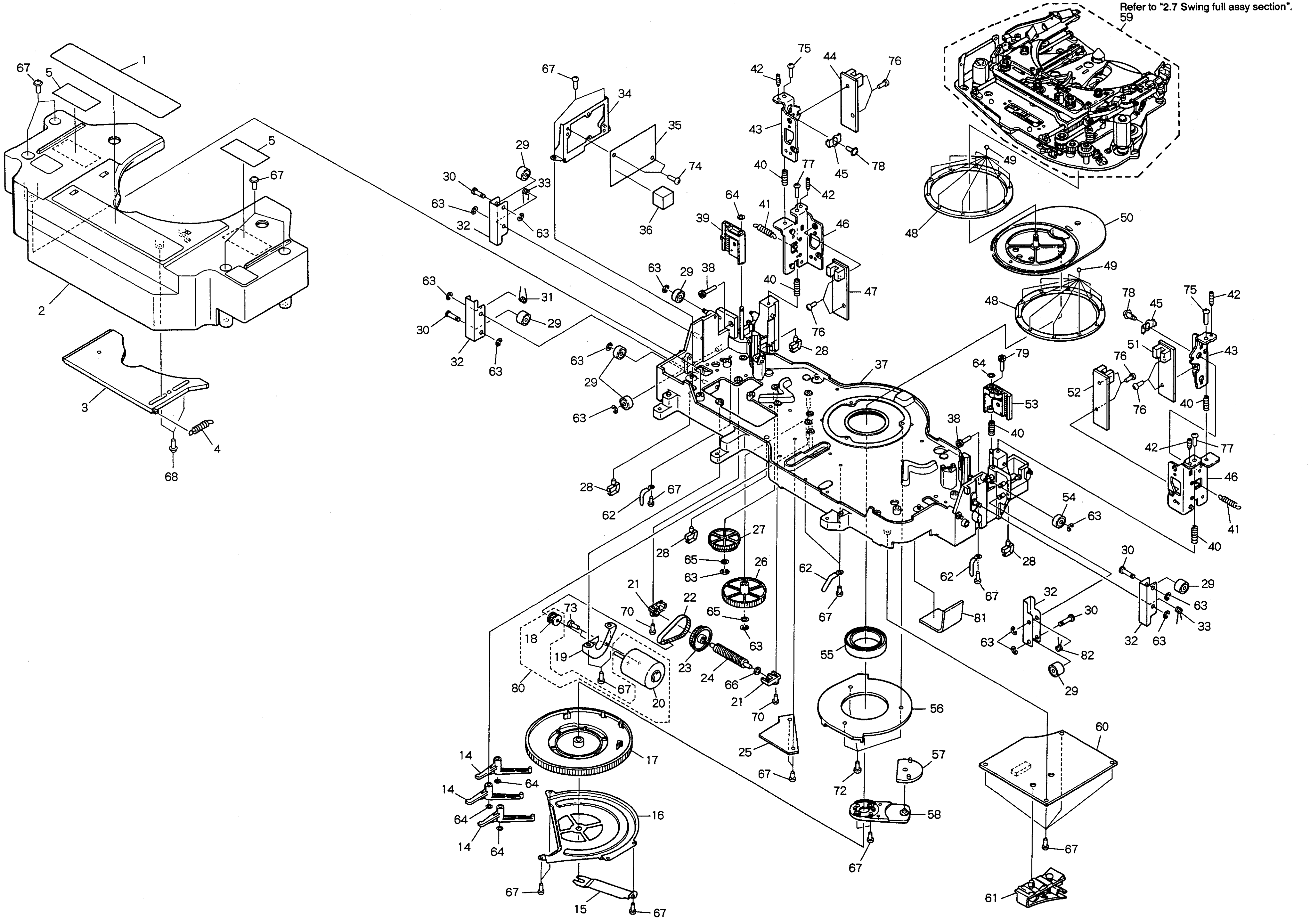
	72	Screw	BMZ30P040FMC
	73	Screw	PMA30P040FCU
	74	Screw	BBZ30P060FZK
	75	Screw	BMZ26P100FZK
	76	Screw	PMA26P040FMC
	77	Screw	BMZ26P100FMC
	78	Screw M3 (3)	DBA1062
	79	Screw	SMZ30H100FBT
	80	Swing motor assy (for service)	RXX1610
	81	Flexible cushion A	REB1260
	82	H spring 3	DBH1277



Refer to "2.7 Swing full assy section".

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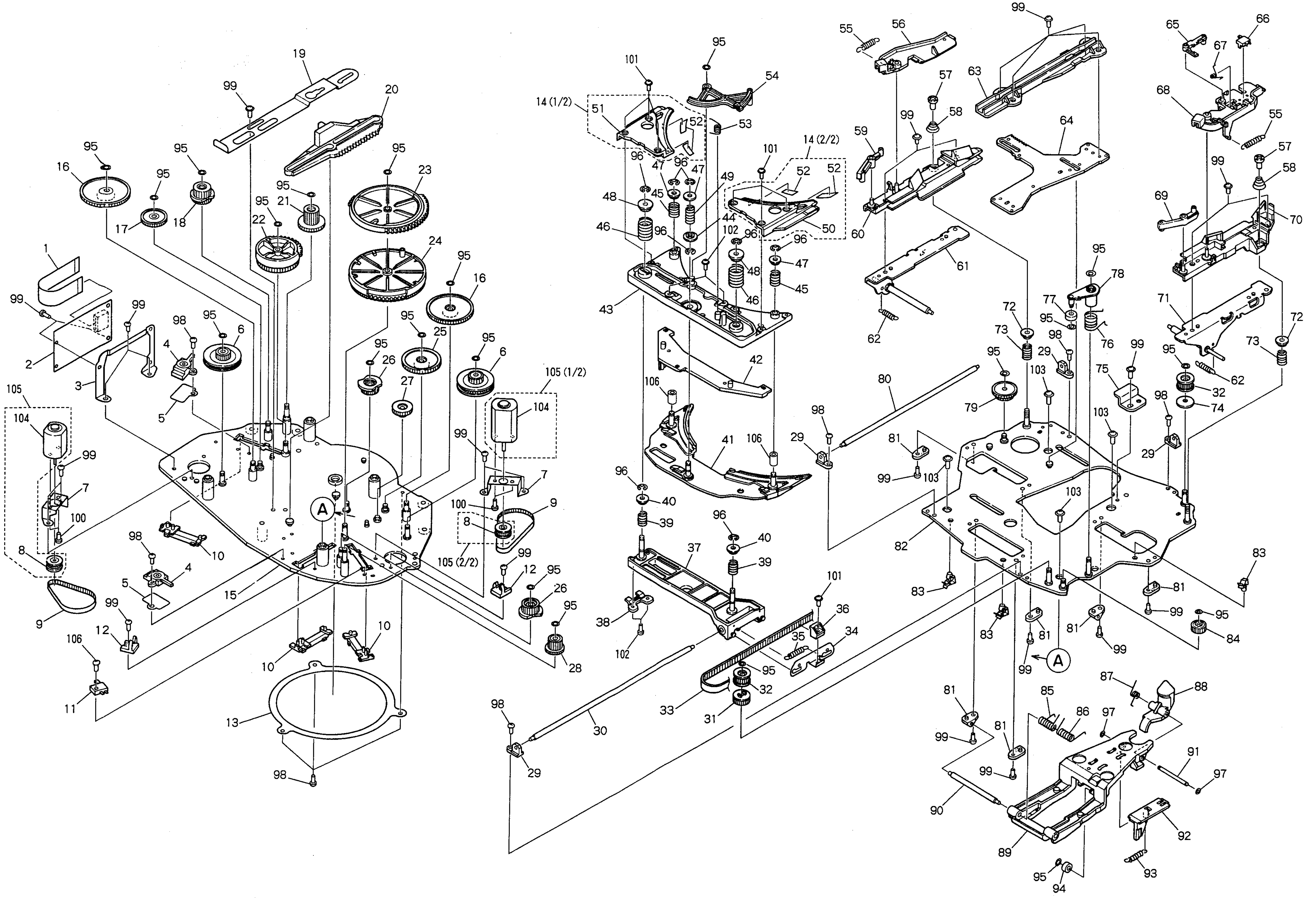
2.7 SWING FULL ASSY SECTION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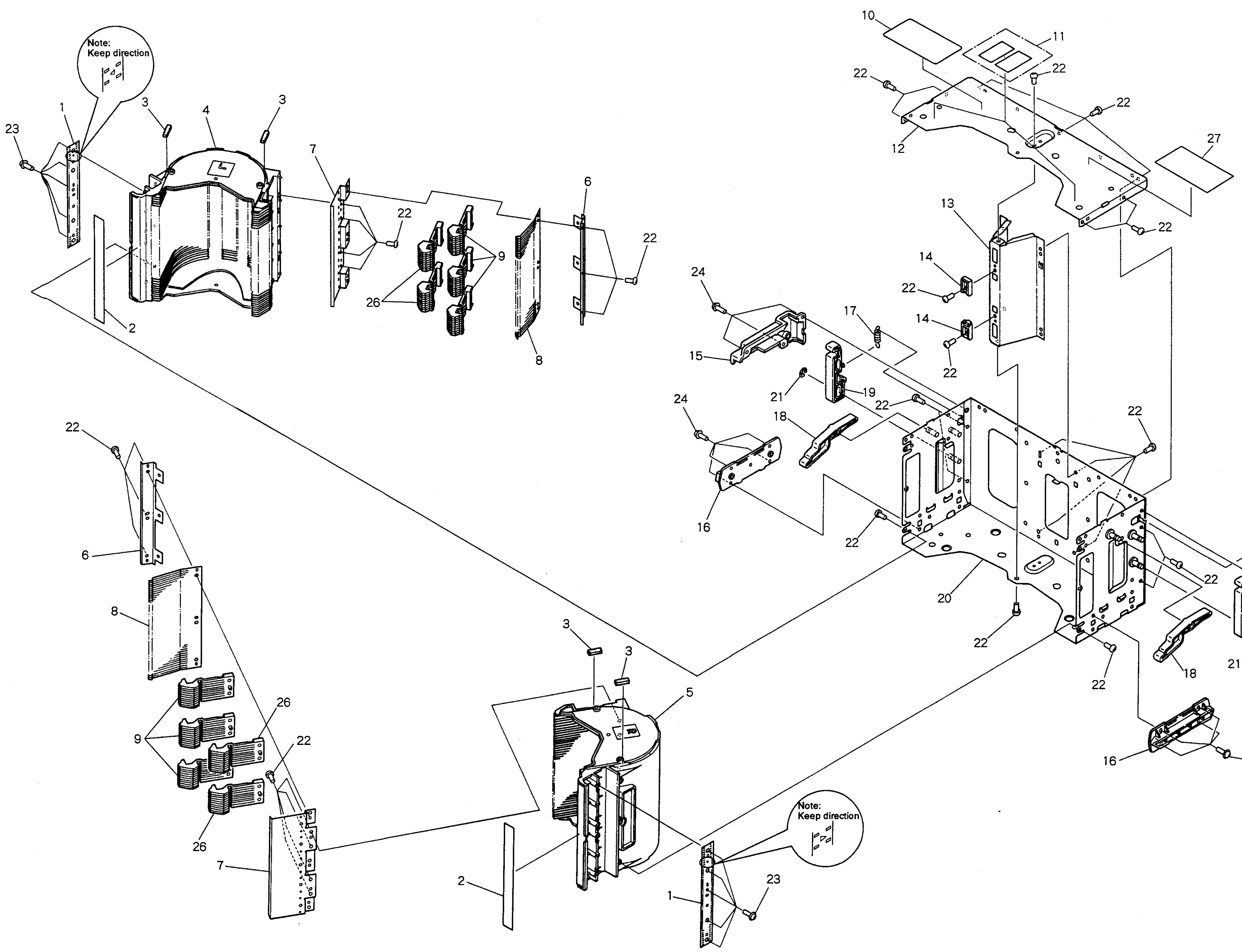
Parts List

Mark	No.	Description	Part No.
	1	Flexible cord C	RDD1292
NSP	2	SWGB unit	RWZ3066
	3	SW board stay	RNE1708
	4	Lever switch	DSK1003
	5	Insulation plate	DEC1313
	6	Timing pulley	DNK1805
	7	Motor stay	DNH2022
NSP	8	Motor pulley	DNK1580
	9	Timing belt	DMS1015
	10	SCSW lever	RNK2004
	11	Push switch	DSG1012
	12	Mini clamp 2	REC1234
	13	Thrust stay	DNH1401
	14	Wing assy (for service)	DXX2257
	15	SW base D assy	DXB1562
	16	CSL gear 2	DNK1820
	17	C gear 3	RNK2027
	18	SLF gear	DNK1806
	19	Lock spring	RBK1052
	20	Table cam	RNK1959
	21	CHN gear	RNK1970
	22	Cam gear (A)	RNK1969
	23	F gear	RNK1972
	24	Cam gear 1	RNK1973
	25	SL gear 3	RNK2002
	26	SLF gear 2	RNK2001
	27	SL gear 4	DNK1822
	28	SL gear 5	RNK1971
	29	Shaft holder	RNG1058
	30	Guide shaft (R)	DLA1654
	31	SL gear 7	RNK1974
	32	S2M pulley SL	RNK1975
	33	S2M belt	REB1241
	34	Slide plate	RNE1694
	35	SP spring	RBH1354
	36	Belt holder	RNK1949
	37	Chuck base assy	DXB1537
	38	Chuck guide	RNK2021
	39	Chuck spring 3	DBH1132
	40	Chuck stay	DLA1480
	41	Chuck 2 assy	RXA1582
	42	Chuck cam	RNK1963
	43	Chuck 1 assy	DXB1538
	44	Chuck washer 3	RNK2007
	45	Chuck spring 1	RBH1378
	46	Chuck spring 2	DBH1131
	47	Chuck washer	DNK1836
	48	Chuck washer 2	DNK1839
	49	Chuck spring 4	RBH1394
	50	Wing R	RNK1965
	51	Wing L	RNK1964
	52	Rubber sheet	REB1231
	53	D release spring	RBH1353
	54	D release lever	RNK1947
	55	DGP spring	RBH1364
	56	D guide plate L	RNK1950
	57	DG height pin	RLA1246
	58	D guide spring 2	RBH1352
	59	D guide lever (L)	RNK1966
	60	D guide L	RNK1961
	61	DG holder (L) assy	RXA1597
	62	D guide spring 3	RBH1362
	63	C cam 2	RNK1948
	64	C cam plate	RNE1628
	65	D sense lever	RNK1960
	66	Push switch	DSG1014
	67	DSL spring	RBH1363
	68	D guide plate R	RNK1951
	69	D guide lever (R)	RNK1967
	70	D guide R	RNK1962
	71	DG holder (R) assy	RXA1598
	72	Guide sleeve	RLA1204
	73	D guide spring 1	RBH1351
	74	SL roller	RNK1977
	75	Stopper plate	RNE1791
	76	Tension spring	RBH1376
	77	Tension roller	RLP1050
	78	Tension plate assy	RXA1577
	79	C gear 4	DNS1098
	80	Guide shaft (L)	RLA1205
	81	Shaft holder 2	RNK1955
	82	SW base U assy	DXB1548
NSP	83	Mini clamp	REC1211
	84	SL gear 6	RNK2003
	85	D table spring L	RBH1347
	86	D table spring R	RBH1348
	87	TH spring	RBH1355
	88	TH hook	RNK1957
	89	Disc table assy	RXA1574
	90	Table shaft	RLA1207
	91	TH shaft	RLA1219
	92	TH cam	RNK1958
	93	TH cam spring	RBH1356
	94	DT roller	RLP1049
	95	Washer	WT26D047D050
	96	E ring	YE25FUC
	97	Washer	WT16D032D050
	98	Screw	BMZ26P040FMC
	99	Screw	PMA26P040FMC
	100	Screw	PMA20P030FMC
	101	Screw	PMH20P050FMC
	102	Screw	AMZ20P040FMC
	103	Screw	AMZ30P040FMC
NSP	104	Motor	PXM1002
	105	Motor assy (for service)	RXX1611
	106	Chuck boss	RLP1051

2.8 DISC MAGAZINE ASSY SECTION

Parts List

Mark	No.	Description	Part No.
	1	Encoder slit	RNE1619
	2	Disc address seal	RAX1012
	3	Rack cushion	REB1245
	4	ROM disc rack (L)	DNK2974
	5	ROM disc rack (R)	DNK2975
	6	RZ plate	RNE1635
	7	Holder plate	RNE1616
	8	Holder stopper	RBK1049
	9	Disc holder W	RNK2107
	10	Rack caution label A	RRW1146
	11	Rack caution label B	DRW1580
NSP	12	Rack base (B)	RNE1633
	13	RG plate	RNE1634
	14	Shipping guide	RNK1998
	15	DS side cover (L)	RNK1979
	16	DS side rail	RNK1984
	17	DS lock SP	RBH1358
	18	DS release lever	RNK1985
	19	DS lock plate	RNK1968
NSP	20	Rack base (A) assy	RXA1583
	21	E ring	YE40FUC
	22	Screw	BBZ30P080FMC
	23	Screw	IBZ20P060FMC
	24	Screw	ABZ30P060FMC
	25	DS side cover (R)	RNK1980
	26	Disc holder R	RNK2108
	27	Rack caution label A	DRW1579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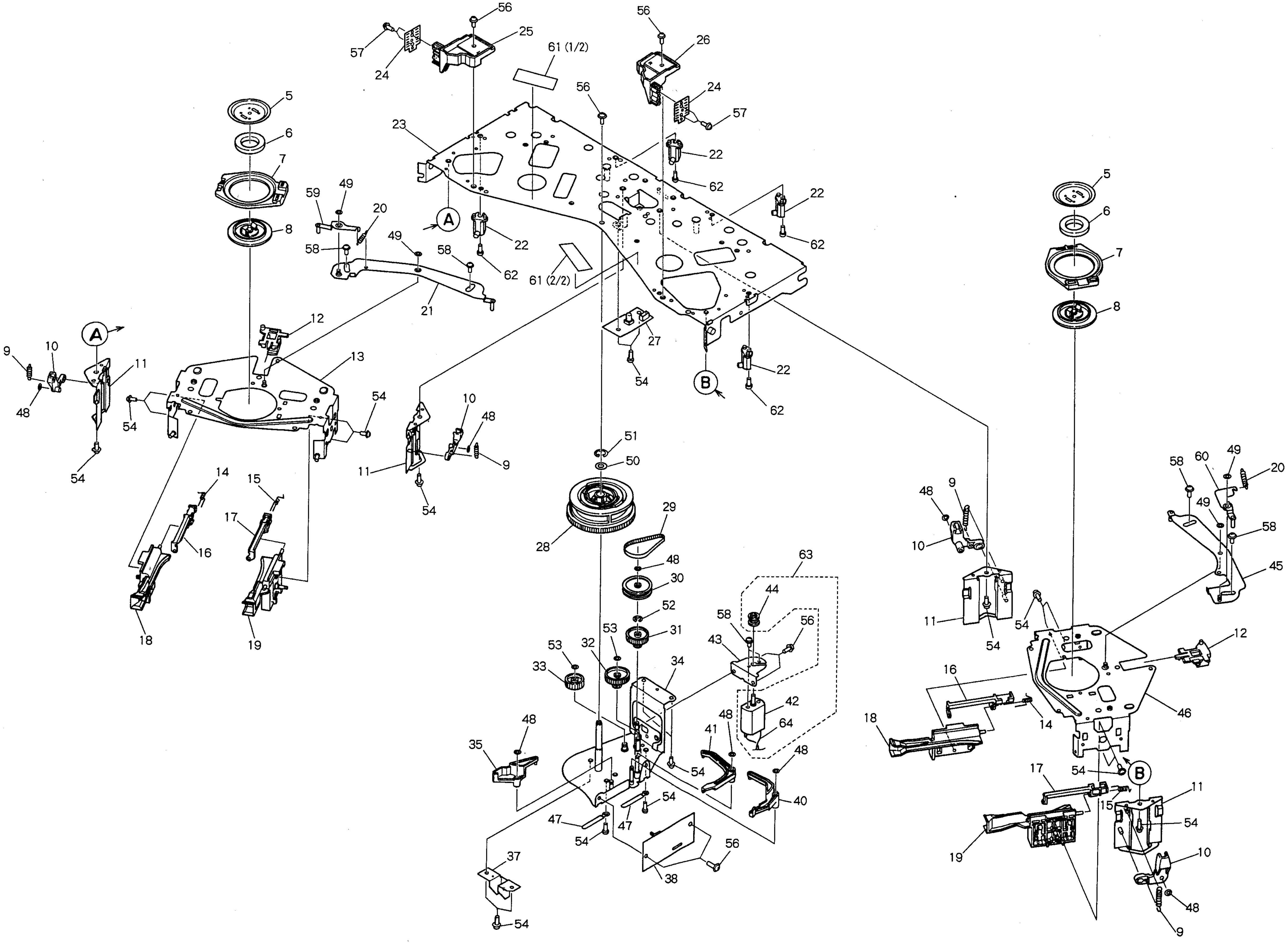
2.9 CD CLAMPER FULL ASSY SECTION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	5	Yoke	PNB1216
	6	Clamp magnet	PMF1014
	7	Clamper retainer	DNK1801
	8	Clamper (under)	DNK1791
	9	Clamp SP	DBH1128
	10	Clamp lever	DNK1792
	11	Side base	DXB1269
	12	Disc stopper	RNK1989
NSP	13	Clamper holder (L) assy	RXA1638
	14	Disc holder spring (L)	RBH1349
	15	Disc holder spring (R)	RBH1350
	16	Disc holder (L)	RNK1942
	17	Disc holder (R)	RNK1943
	18	Side rack (L)	RNK1940
	19	Side rack (R)	RNK1941
	20	Sync. SP	RBH1381
	21	Sync. lever (L)	DXB1270
	22	D holder guide	RNK1986
NSP	23	Clamper stay assy	RXA1573
	24	CDP slit	RNE1620
	25	Slit holder (L)	RNK1938
	26	Slit holder (R)	RNK1939
NSP	27	SSEB unit	RWZ3076
	28	Clamper cam gear	DNK1876
	29	Timing belt	DMS1015
	30	Timing pulley	DNK1805
	31	CL gear B	DNK1796
	32	CL gear A	DNK1795
	33	CL gear C	DNK1797
	34	Gear base assy	RXA1644
	35	Switch lever A	RNK1952
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	37	Gear stay S	RNE1744
NSP	38	CMSL unit	RWZ3071
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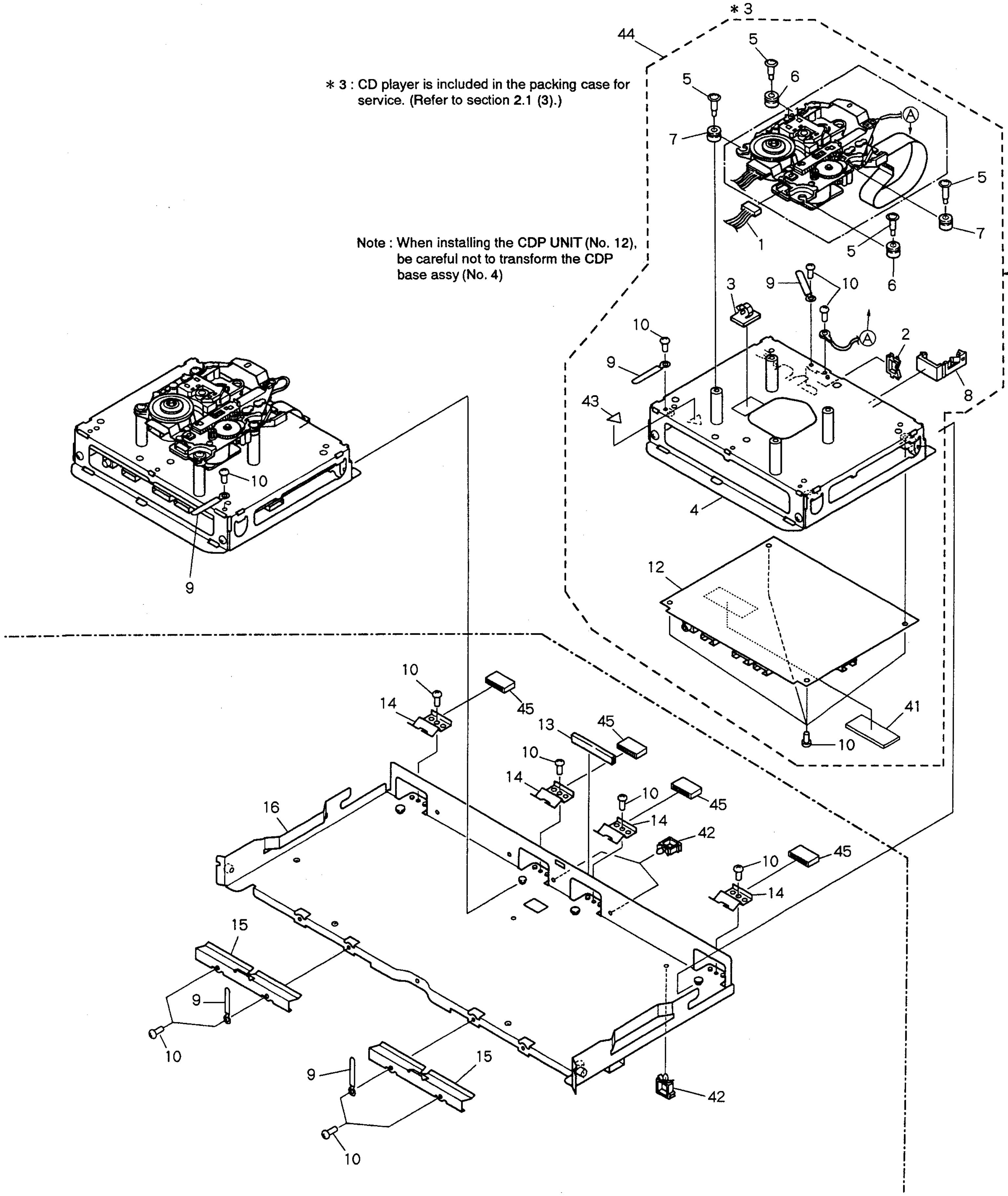
	40	Switch lever B	RNK1953
	41	Switch lever C	RNK1954
NSP	42	Motor	PXM1002
	43	Motor bracket	DNH1386
NSP	44	Motor pulley	DNK1580
	45	Sync. lever (R)	DXB1271
NSP	46	Clamper holder (R) assy	RXA1639
	47	Cord clamper	RNH-184
	48	Washer	WT26D047D050
	49	Washer	WT34D060D025
	50	Washer	WA72D110D050
	51	E ring	YE40FUC
	52	E ring	YE30FUC
	53	Washer	WT34D060D050
	54	Screw	ABZ30P050FZK
	55	Screw	IPZ20P050FMC
	56	Screw	AMZ30P040FMC
	57	Screw	IBZ20P060FMC
	58	Screw	PMB20P040FMC
	59	Drive lever (L)	DXB1272
	60	Drive lever (R)	DXB1273
	61	Caution label	DRW1625
	62	Screw	BBZ30P060FMC
	63	Clamper motor assy (for service)	RXX1612
	64	Connector assy 2P	RKP1649

2.10 CD PLAYER SECTION (PD-CACV5000)

Parts List

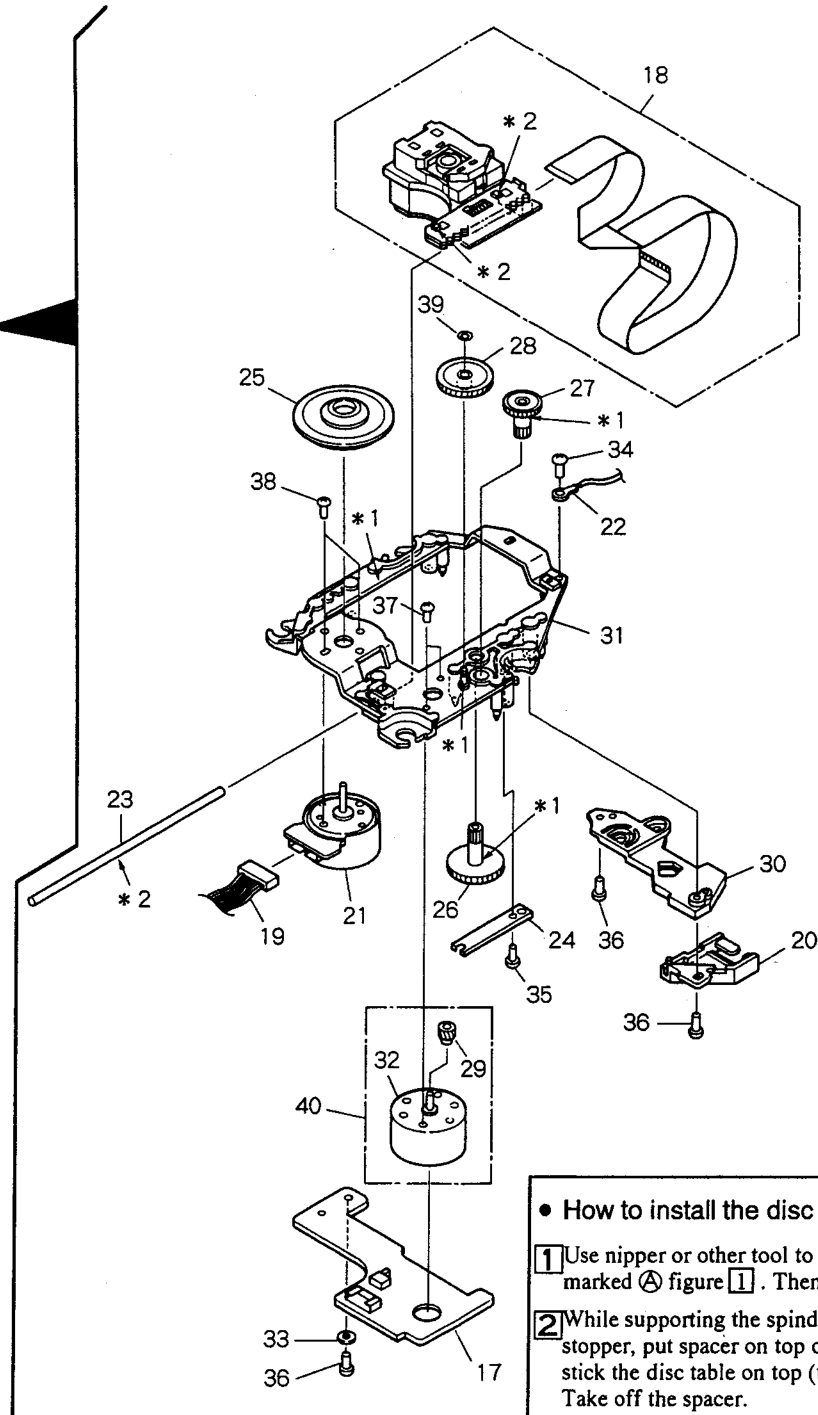
Mark	No.	Description	Part No.
	1	2mm pitch connector assy 4P	PDE1240
	2	Edge guard	DEC1155
	3	Cord holder	DEC1355
NSP	4	CDP base assy	DXB1520
	5	Float screw	PBA1011
	6	Float rubber	PEB1014
	7	Float rubber	PEB1132
NSP	8	Cable clamper	REC1182
	9	Cord clamper	RNH-184
	10	Screw	BBZ30P060FMC
	11	Servo mechanism assy-S	DXX2188
	12	CDP unit	DWP1061
NSP	13	Edge guard (A)	REC1225
	14	PL holder	RBK1053
	15	Player holder metal	RBK1058
NSP	16	Player base assy	RXA1604
NSP	17	MECB unit	DWX1436
	18	Pickup assy-S	DXX2185
	19	Connector assy 11P	DKP2809
NSP	20	Flexible guide	DNK2874
	21	Spindle motor	DXM1063
	22	Earth lead unit	PDF1074
	23	Guide bar	PLA1094
	24	Gear holder	PNB1303
	25	Disc table	PNW1608
	26	Gear 1	PNW2052
	27	Gear 2	PNW2053
	28	Gear 3	PNW2054
	29	Pinion gear	PNW2055
	30	Flexible holder	PNW2057
	31	Carriage base	PNW2445
NSP	32	Carriage DC motor/0.3W	PXM1027
	33	Fiber washer	VEC1254
	34	Screw	BBZ26P060FMC
	35	Screw	BPZ20P060FMC
	36	Screw	BPZ26P100FMC
	37	Screw	JFZ17P025FZK
	38	Screw	JFZ20P040FMC
	39	Washer	WT12D032D025
	40	Carriage DC motor assy	PEA1246
	41	Program microcomputer (IC303)	DYW1347
NSP	42	Locking wire saddle	DEC1717
	43	Caution label (G)	VRW-329
	44	CD player (for service)	DXX2276
	45	Edge cover	DEC1891



* 3
44
5
5
6
7
Ⓐ
5
7
1
5
6
3
9
10
Ⓐ
2
10
9
8
43
4
12
41
10
10
9
10
14
45
13
45
10
14
10
45
14
42
10
45
14
16
15
9
10
15
9
10
42

∗ 3 : CD player is included in the packing case for service. (Refer to section 2.1 (3).)

Note : When installing the CDP UNIT (No. 12), be careful not to transform the CDP base assy (No. 4)

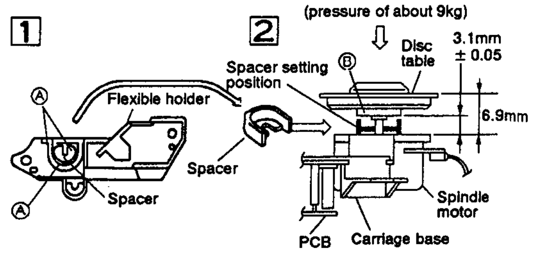


18
∗ 2
∗ 2
39
28
25
27
∗ 1
34
38
∗ 1
22
37
31
∗ 1
23
∗ 2
∗ 1
30
19
21
26
24
36
20
35
36
32
29
40
33
36
17

∗ 1 : FROIL (G-397)
∗ 2 : FROIL (G-92SA)

• How to install the disc table

1. Use nipper or other tool to cut the two sections marked Ⓐ figure 1 . Then remove the spacer.
2. While supporting the spindle motor shaft with the stopper, put spacer on top of the carriage base and stick the disc table on top (takes about 9kg pressure). Take off the spacer.



1
2
(pressure of about 9kg)
Disc table
3.1mm ± 0.05
Spacer setting position
Ⓑ
Ⓐ
Flexible holder
6.9mm
Spacer
Spacer
Spindle motor
Ⓐ
PCB
Carriage base

3. DISASSEMBLY

• DISASSEMBLY THE SWING FULL ASSY (Fig. 1)

1. Open the door.
2. Remove the four screws ① and detach the VD cover.
3. Pull out the flexible cord C ② from the connector.
4. Turn the CSL gear 2 ③ counterclockwise and slide the Chuck assy toward the front.
5. Loosen the screw in the hole ⓐ using a Phillips screwdriver.
6. Push the lock spring ④ toward the front.
7. Pull the swing full assy upward and out.

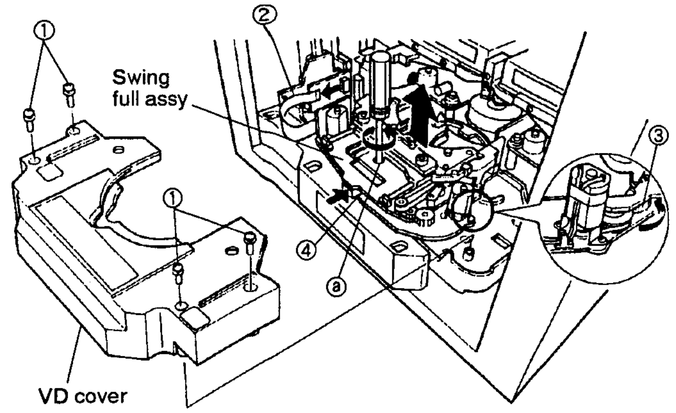


Fig.1 Disassembly the swing full assy

• DISASSEMBLY THE CD CLAMPER FULL ASSY (Fig. 2)

1. Open the door and move the carriage base assy upwards.
2. Disconnect the relay connector ①.
3. Remove the three screws ②.
4. Pull out the CD clamper full assy horizontally to the front.

Note : Be sure to perform the disassembly the CD clamper full assy after the CD players (left and right) are removed.

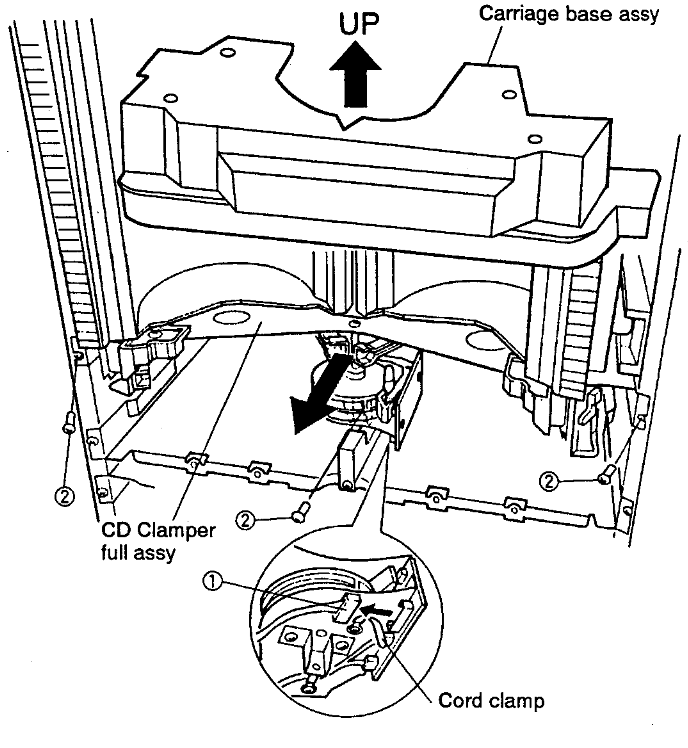


Fig.2 Disassembly the CD clamper full assy

• DISASSEMBLY THE CD PLAYER (on the left side)(Fig. 3)

(The procedure is the same for the player on the right side)

1. Open the door and move the carriage base assy upwards.
2. Pull to remove the wires from the cord clamp and disconnect the three connectors ①.
3. Remove the two screws ② to remove the player holder metal and move the CD player toward the front while pulling up the front side of the player about 2 mm.

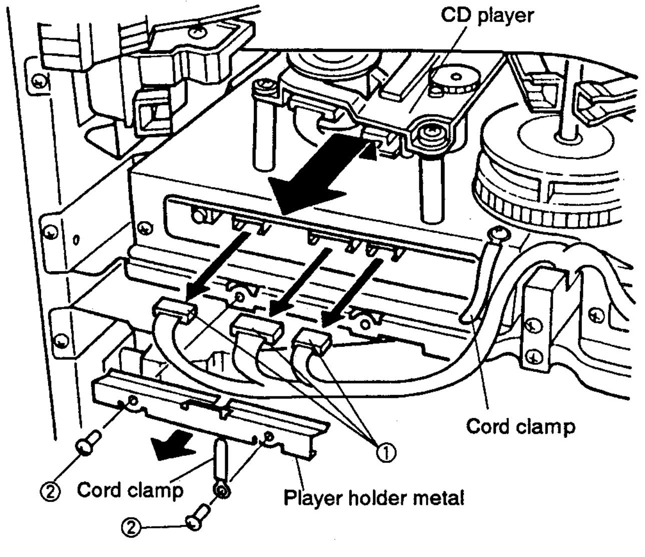


Fig.3 Disassembly the CD player

• DISASSEMBLY THE GEAR BOX ASSY (Fig. 4 and 5)

1. Open the door, remove the six screws ① and detach the side plate R ②.
2. Detach the motor cover ③ and connectors ④ and ⑤.
3. Loosen the two screws ⑥ and remove the uppermost disc magazine ⑦.
4. Slide the gear box to the front and pull the timing belts ⑨ off VD pulley A ⑩.
5. Remove the gear box spring ⑧.
6. Remove two screws ⑥ and remove the gear box assy.

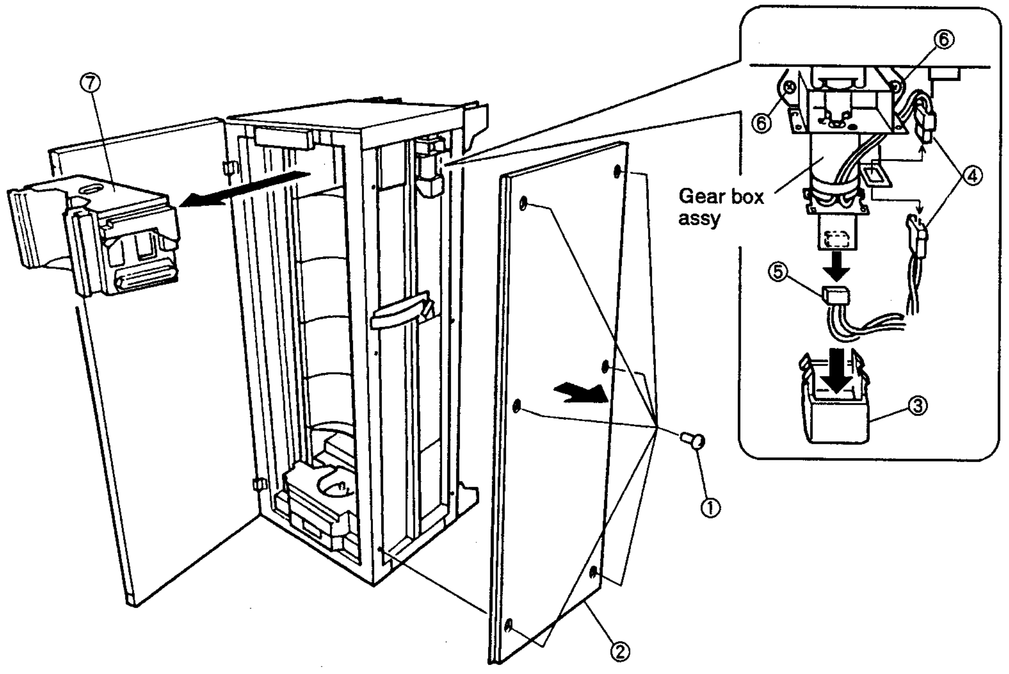


Fig.4 Disassembly the gear box assy (1)

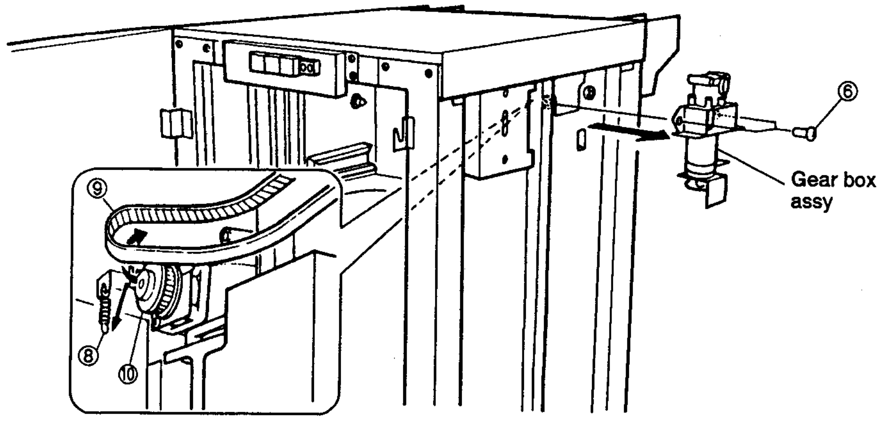
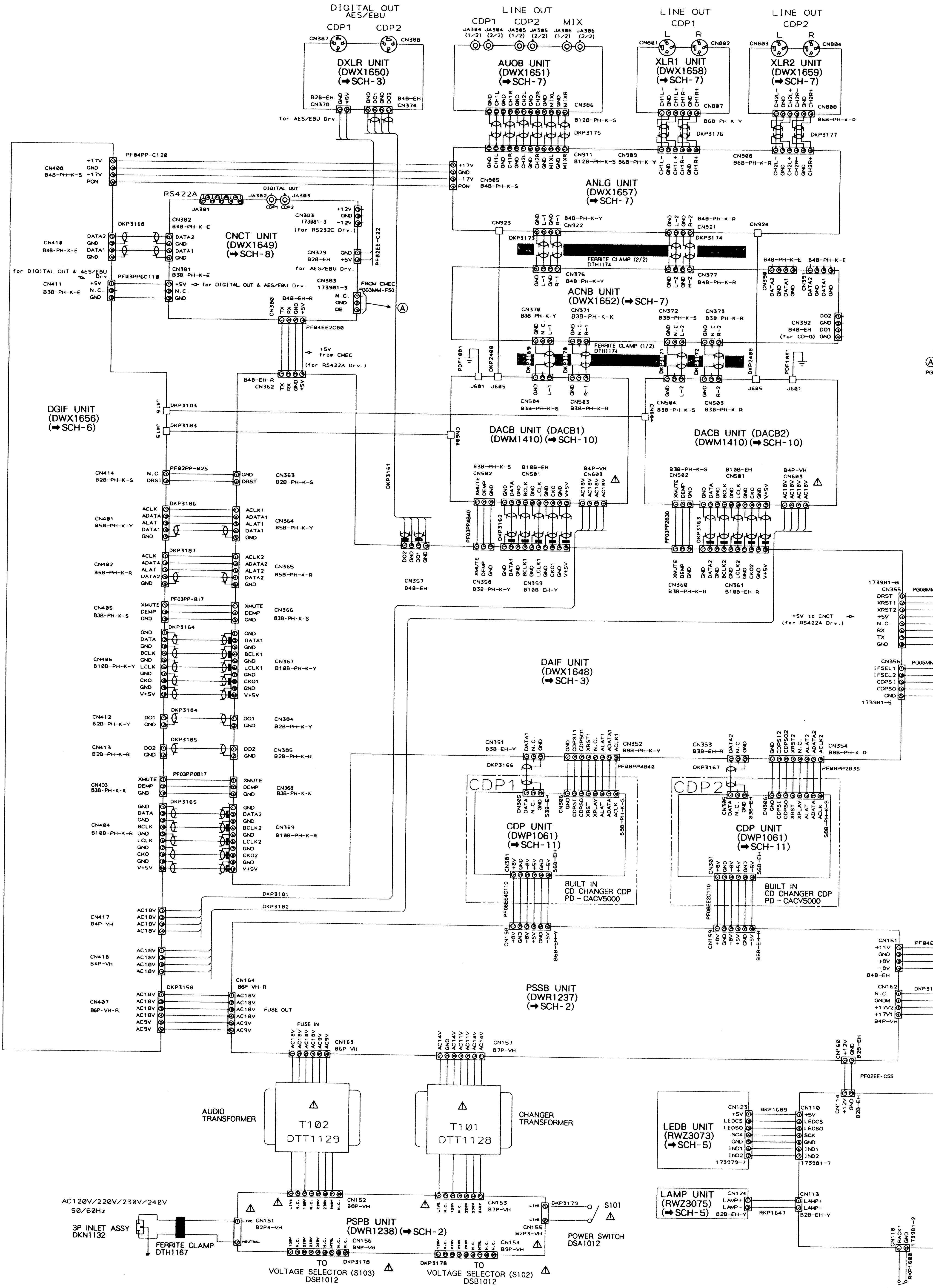
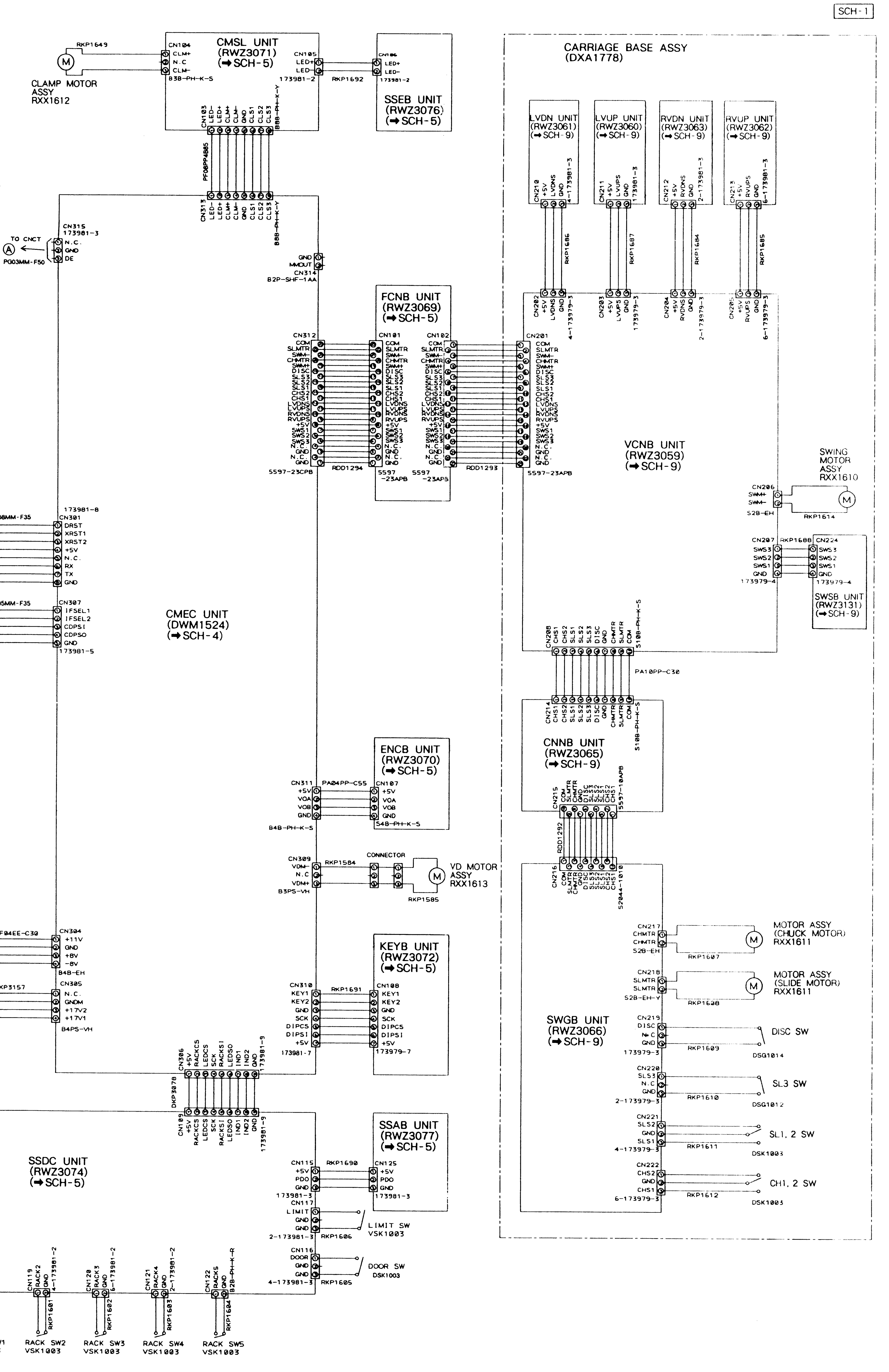


Fig.5 Disassembly the gear box assy (2)

4. SCHEMATIC AND PCB CONNECTION DIAGRAMS

4.1 OVERALL CONNECTIONS


DIGITAL OUT AES/EBU
CDP1
CDP2
DXLR UNIT (DWX1650) (➡SCH-3)
LINE OUT
CDP1 CDP2 MIX
AUOB UNIT (DWX1651) (➡SCH-7)
LINE OUT CDP1
XLR1 UNIT (DWX1658) (➡SCH-7)
LINE OUT CDP2
XLR2 UNIT (DWX1659) (➡SCH-7)
ANLG UNIT (DWX1657) (➡SCH-7)
RS422A
DIGITAL OUT
CNCT UNIT (DWX1649) (➡SCH-8)
FROM CMEC
FERRITE CLAMP (2/2) DTH1174
ACNB UNIT (DWX1652) (➡SCH-7)
FERRITE CLAMP (1/2) DTH1174
DGIF UNIT (DWX1656) (➡SCH-6)
DACB UNIT (DACB1) (DWM1410) (➡SCH-10)
DACB UNIT (DACB2) (DWM1410) (➡SCH-10)
DAIF UNIT (DWX1648) (➡SCH-3)
CDP1
CDP UNIT (DWP1061) (➡SCH-11)
BUILT IN CD CHANGER CDP PD - CACV5000
CDP2
CDP UNIT (DWP1061) (➡SCH-11)
BUILT IN CD CHANGER CDP PD - CACV5000
PSSB UNIT (DWR1237) (➡SCH-2)
FUSE OUT
FUSE IN
AUDIO TRANSFORMER
T102 DTT1129
T101 DTT1128
CHANGER TRANSFORMER
LEDB UNIT (RWZ3073) (➡SCH-5)
LAMP UNIT (RWZ3075) (➡SCH-5)
AC120V/220V/230V/240V 50/60Hz
3P INLET ASSY DKN1132
FERRITE CLAMP DTH1167
PSPB UNIT (DWR1238) (➡SCH-2)
TO VOLTAGE SELECTOR (S103) DSB1012
TO VOLTAGE SELECTOR (S102) DSB1012
S101
POWER SWITCH DSA1012
RACK SW1 VSK1003
A
1 2 3 4
A B C D E F


SCH-1
CLAMP MOTOR ASSY RXX1612
RKP1649
CMSL UNIT (RWZ3071) (➡SCH-5)
SSEB UNIT (RWZ3076) (➡SCH-5)
RKP1692
TO CNCT
CN315
PF08PP4B05
CN313
CN314
FCNB UNIT (RWZ3069) (➡SCH-5)
CN312
CN101
CN102
RDD1294
RDD1293
5597-23CPB
CMEC UNIT (DWM1524) (➡SCH-4)
CN301
CN307
CN304
CN305
CN311
ENCB UNIT (RWZ3070) (➡SCH-5)
CN309
RKP1584
VD MOTOR ASSY RXX1613
RKP1585
CONNECTOR
KEYB UNIT (RWZ3072) (➡SCH-5)
CN310
RKP1691
CN108
CN306
DKP3078
CN109
SSAB UNIT (RWZ3077) (➡SCH-5)
CN115
RKP1690
CN125
CN117
LIMIT SW VSK1003
RKP1606
CN116
DOOR SW DSK1003
RKP1605
SSDC UNIT (RWZ3074) (➡SCH-5)
CN119
CN120
CN121
CN122
RKP1601
RKP1602
RKP1603
RKP1604
RACK SW2 VSK1003
RACK SW3 VSK1003
RACK SW4 VSK1003
RACK SW5 VSK1003
CARRIAGE BASE ASSY (DXA1778)
LVDN UNIT (RWZ3061) (➡SCH-9)
LVUP UNIT (RWZ3060) (➡SCH-9)
RVDN UNIT (RWZ3063) (➡SCH-9)
RVUP UNIT (RWZ3062) (➡SCH-9)
RKP1686
RKP1687
RKP1684
RKP1685
CN201
CN202
CN203
CN204
CN205
CN210
CN211
CN212
CN213
VCNB UNIT (RWZ3059) (➡SCH-9)
SWING MOTOR ASSY RXX1610
CN206
RKP1614
CN207
RKP1688
CN224
SWSB UNIT (RWZ3131) (➡SCH-9)
CN208
PA10PP-C30
CN214
CNNB UNIT (RWZ3065) (➡SCH-9)
CN215
RDD1292
CN216
CN217
MOTOR ASSY (CHUCK MOTOR) RXX1611
RKP1607
CN218
MOTOR ASSY (SLIDE MOTOR) RXX1611
RKP1608
SWGB UNIT (RWZ3066) (➡SCH-9)
CN219
DISC SW DSG1014
RKP1609
CN220
SL3 SW DSG1012
RKP1610
CN221
SL1, 2 SW DSK1003
RKP1611
CN222
CH1, 2 SW DSK1003
RKP1612

NOTE FOR SCHEMATIC DIAGRAMS (Type 4A)

1. When ordering service parts, be sure to refer to "PARTS LIST of EXPLODED VIEWS" or "PCB PARTS LIST".

2. Since these are basic circuits, some parts of them or the values of some components may be changed for improvement.

3. RESISTORS :
Unit : k : kΩ, M : MΩ, or Ω unless otherwise noted.
Rated power : 1/4W, 1/6W, 1/8W, 1/10W unless otherwise noted.
Tolerance : (F) : ±1%, (G) : ±2%, (K) : ±10%, (M) : ±20% or ±5% unless otherwise noted.

4. CAPACITORS :
Unit : p : pF or μF unless otherwise noted.
Ratings : capacitor (μF) / voltage (V) unless otherwise noted.
Rated voltage : 50V except for electrolytic capacitors.

5. COILS :
Unit : m : mH or μH unless otherwise noted.

6. VOLTAGE AND CURRENT :
▭ or ← V :
DC voltage (V) in PLAY mode unless otherwise noted.
⇦ mA or ← mA :
DC current in PLAY mode unless otherwise noted.
Value in ( ) is DC current in STOP mode.

7. OTHERS :
- ⊘ or ⊘ : Adjusting point.
- ◀ : Measurement point.
- The ⚠ mark found on some component parts indicates the importance of the safety factor of the parts. Therefore, when replacing, be sure to use parts of identical designation.

8. SCH – ☐ ON THE SCHEMATIC DIAGRAM :
- SCH– ☐ indicates the drawing number of the schematic diagram. (SCH stands for schematic diagram.)

9. SWITCHES (Underline indicates switch position) :
CHANGER SECTION
- S101 : POWER ON – OFF
- S102 : VOLTAGE SELECTOR 120V – 240V
- S103 : VOLTAGE SELECTOR 120V – 240V
- Lever switch : LIMIT SW
- Lever switch : DOOR SW
- Lever switch : RACK 1 SW
- Lever switch : RACK 2 SW
- Lever switch : RACK 3 SW
- Lever switch : RACK 4 SW
- Lever switch : RACK 5 SW
- Lever switch : CHACK SW 1, 2
- Lever switch : SLIDE SW 1, 2
- Push switch : SLIDE SW 3
- Push switch : DISC SW

CMSL UNIT
- S611 : CLAMP SW 1
- S612 : CLAMP SW 2
- S613 : CLAMP SW 3

KEYB UNIT
- S701 : DIP SW 1 – 4 ON – OFF
- S702 : ADDRESS SW 0 – 9
- S703: (+)
- S704 : (–)
- S705 : S1(100)
- S706 : S2(10)
- S707: S3(1)
- S708 : S4(INPUT)
- S709 : ON/OFF
- S710 : (+)

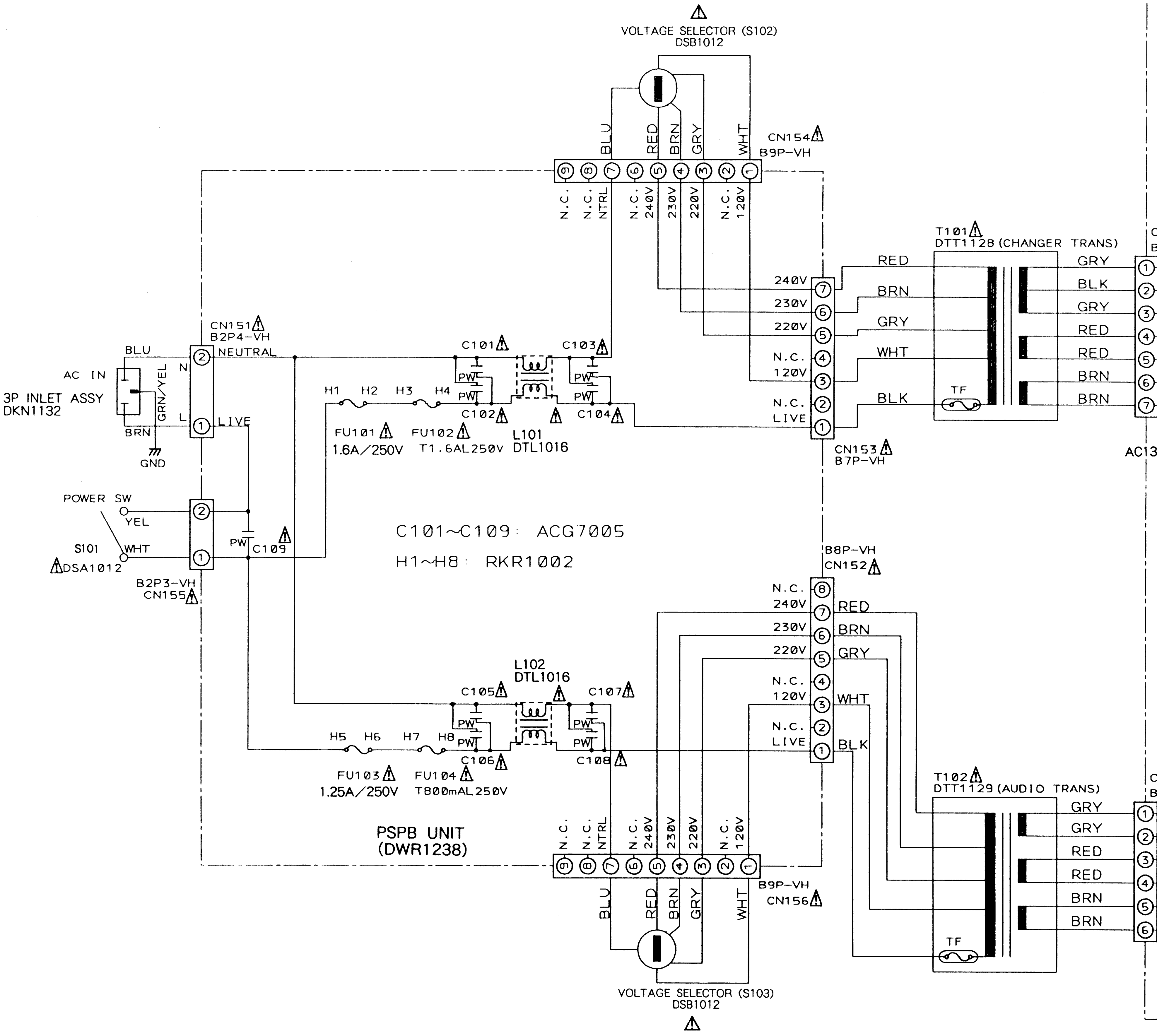
SWSB UNIT
- S501 : SWING SW 1
- S502 : SWING SW 2
- S503 : SWING SW 3

MECB UNIT
- S610 : INSIDE SW

4.2 PSSB AND PSPB UNITS

• NOTE FOR FUSE REPLACEMENT

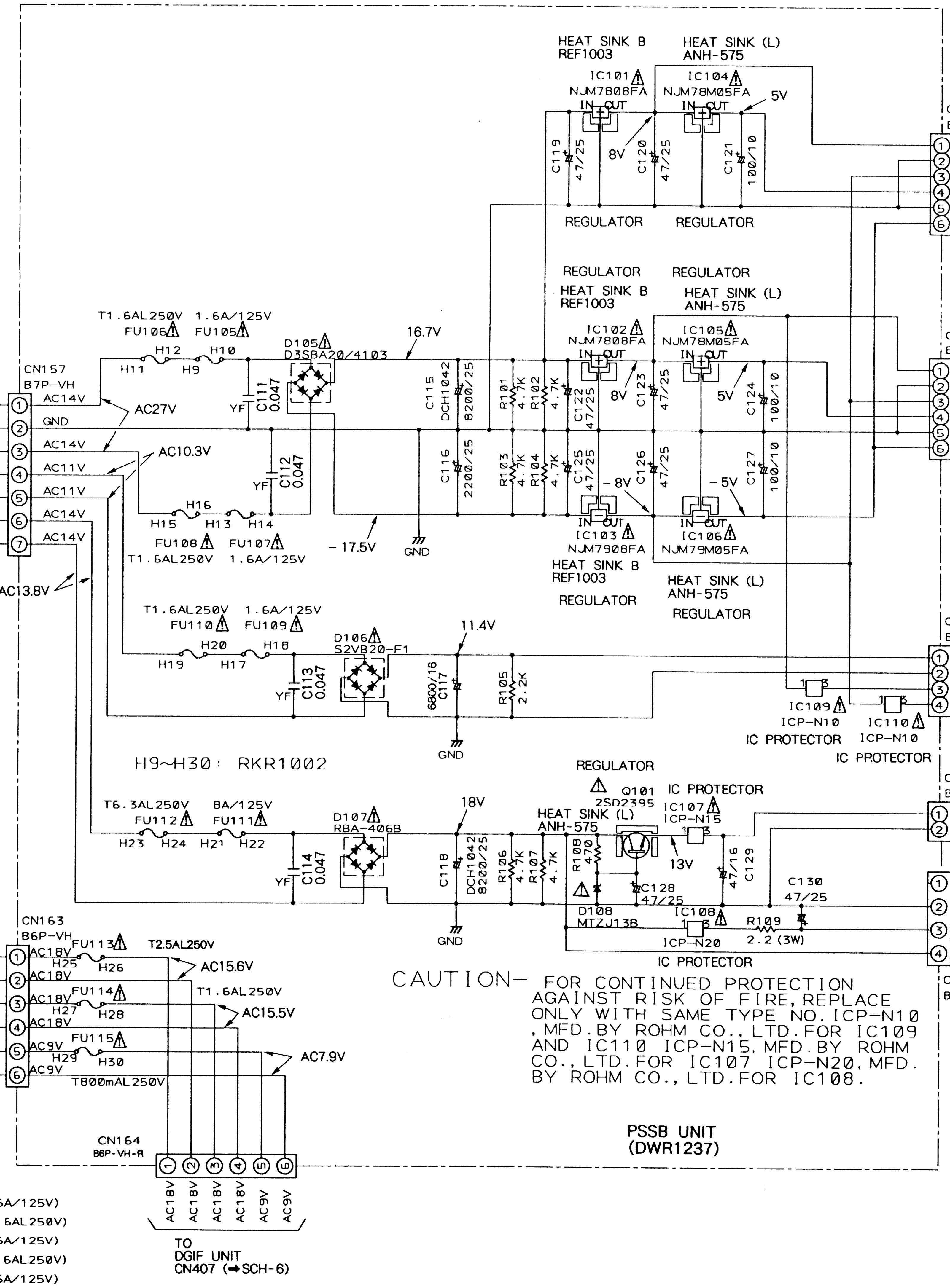
CAUTION – FOR CONTINUED PROTECTION AGAINST RISK OF FIRE, REPLACE ONLY WITH SAME TYPE AND RATINGS ONLY.


VOLTAGE SELECTOR (S102)
DSB1012
BLU
RED
BRN
GRY
WHT
CN154
B9P-VH
N.C.
N.C.
NTRL
N.C.
240V
230V
220V
N.C.
120V
T101
DTT1128 (CHANGER TRANS)
RED
BRN
GRY
WHT
BLK
GRY
BLK
GRY
RED
RED
BRN
BRN
TF
240V
230V
220V
N.C.
120V
N.C.
LIVE
CN153
B7P-VH
AC13
CN151
B2P4-VH
NEUTRAL
LIVE
BLU
BRN
GRN/YEL
N
L
AC IN
3P INLET ASSY
DKN1132
GND
C101
C102
C103
C104
PW
H1 H2 H3 H4
FU101
1.6A/250V
FU102
T1.6AL250V
L101
DTL1016
POWER SW
YEL
WHT
S101
DSA1012
B2P3-VH
CN155
C109
C101~C109 : ACG7005
H1~H8 : RKR1002
B8P-VH
CN152
N.C.
240V
230V
220V
N.C.
120V
N.C.
LIVE
RED
BRN
GRY
WHT
BLK
L102
DTL1016
C105
C106
C107
C108
H5 H6 H7 H8
FU103
1.25A/250V
FU104
T800mAL250V
PSPB UNIT
(DWR1238)
T102
DTT1129 (AUDIO TRANS)
GRY
GRY
RED
RED
BRN
BRN
TF
B9P-VH
CN156
VOLTAGE SELECTOR (S103)
DSB1012

FU101 : REK1060 (1.6A/250V)
FU102 : REK1024 (T1.6AL250V)
FU103 : REK1058 (1.25A/250V)
FU104 : REK1021 (T800mAL250V)

FU105 : REK1077 (1.6A/1
FU106 : REK1024 (T1.6AL
FU107 : REK1077 (1.6A/1
FU108 : REK1024 (T1.6AL
FU109 : REK1077 (1.6A/1
FU110 : REK1024 (T1.6AL
FU111 : REK1086 (8A/125
FU112 : REK1030 (T6.3AL

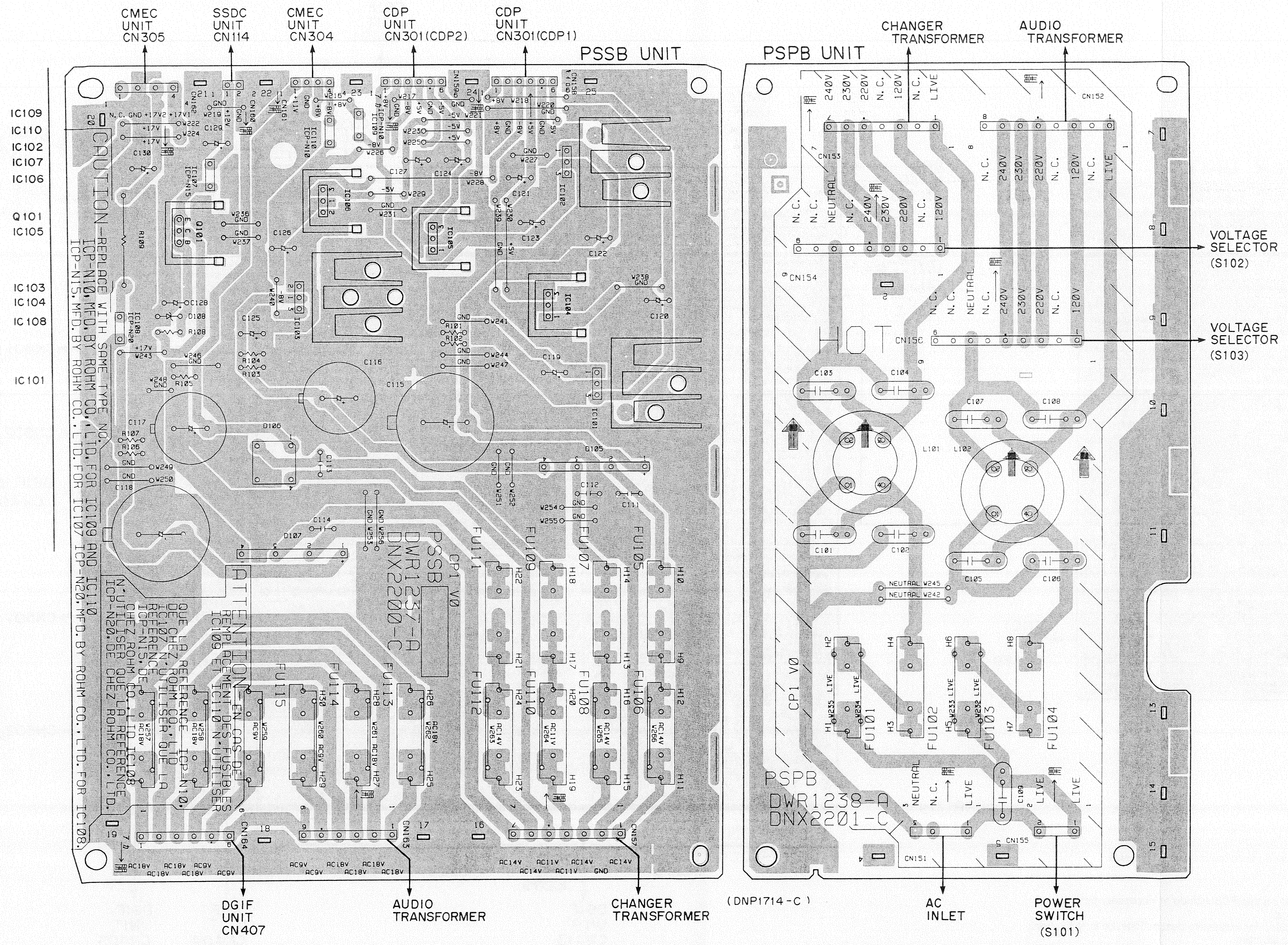
SCH – 2


HEAT SINK B
REF1003
HEAT SINK (L)
ANH-575
IC101
NJM7808FA
IC104
NJM78M05FA
IN OUT
5V
8V
C119 47/25
C120 47/25
C121 100/10
REGULATOR
REGULATOR
CN158
B6B-EH-Y
+8V
GND
–8V
+5V
GND
–5V
TO
CDP UNIT
(CDP 1)
CN301
(➡SCH-11)
REGULATOR
REGULATOR
HEAT SINK B
REF1003
HEAT SINK (L)
ANH-575
T1.6AL250V 1.6A/125V
FU106 FU105
IC102
NJM7808FA
IC105
NJM78M05FA
D105
D3SBA20/4103
16.7V
CN159
B6B-EH-R
+8V
GND
–8V
+5V
GND
–5V
TO
CDP UNIT
(CDP 2)
CN301
(➡SCH-11)
CN157
B7P-VH
H12 H10
H11 H9
AC14V
GND
AC14V
AC11V
AC11V
AC14V
AC14V
AC27V
YF
C111 0.047
C115 DCH1042 8200/25
R101 4.7K
R102 4.7K
C122 47/25
8V
C123 47/25
5V
C124 100/10
AC10.3V
YF
C112 0.047
C116 2200/25
R103 4.7K
R104 4.7K
C125 47/25
– 8V
C126 47/25
– 5V
C127 100/10
H16
H15 H13 H14
FU108 FU107
T1.6AL250V 1.6A/125V
– 17.5V
GND
IC103
NJM7908FA
HEAT SINK B
REF1003
REGULATOR
IC106
NJM79M05FA
HEAT SINK (L)
ANH-575
REGULATOR
AC13.8V
T1.6AL250V 1.6A/125V
FU110 FU109
D106
S2VB20-F1
11.4V
H20 H18
H19 H17
YF
C113 0.047
6800/16 C117
R105 2.2K
GND
CN161
B4B-EH
+11V
GND
+8V
–8V
TO
CMEC UNIT
CN304
(➡SCH-4)
IC109
ICP-N10
IC PROTECTOR
IC110
ICP-N10
IC PROTECTOR
H9~H30 : RKR1002
REGULATOR
Q101
2SD2395
IC PROTECTOR
IC107
ICP-N15
CN160
B2B-EH
+12V
GND
TO
SSDC UNIT
CN114 (➡SCH-5)
T6.3AL250V 8A/125V
FU112 FU111
D107
RBA-406B
18V
HEAT SINK (L)
ANH-575
H23 H24 H21 H22
YF
C114 0.047
C118 DCH1042 8200/25
R106 4.7K
R107 4.7K
R108 470
13V
C129 47/16
C128 47/25
D108
MTZJ13B
IC108
R109
2.2 (3W)
C130
47/25
ICP-N20
IC PROTECTOR
GND
N.C.
GNDM
+17V2
+17V1
TO
CMEC UNIT
CN305
(➡SCH-4)
CN162
B4P-VH
CN163
B6P-VH
AC18V FU113 T2.5AL250V
H25 H26
AC18V
AC15.6V
AC18V FU114
T1.6AL250V
H27 H28
AC18V
AC15.5V
AC9V FU115
H29 H30
AC9V
AC7.9V
T800mAL250V
PSSB UNIT
(DWR1237)
CN164
B6P-VH-R
AC18V
AC18V
AC18V
AC18V
AC9V
AC9V
TO
DGIF UNIT
CN407 (➡SCH-6)

CAUTION– FOR CONTINUED PROTECTION AGAINST RISK OF FIRE, REPLACE ONLY WITH SAME TYPE NO. ICP-N10, MFD. BY ROHM CO., LTD. FOR IC109 AND IC110 ICP-N15, MFD. BY ROHM CO., LTD. FOR IC107 ICP-N20, MFD. BY ROHM CO., LTD. FOR IC108.

5A/125V)
6AL250V)
5A/125V)
6AL250V)
5A/125V)
6AL250V) FU115 : REK1021 (T800mAL250V)
/125V) FU114 : REK1024 (T1.6AL250V)
3AL250V) FU113 : REK1026 (T2.5AL250V)

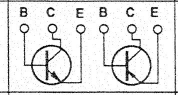
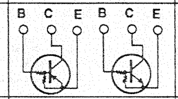
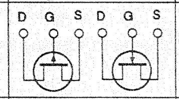
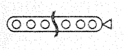
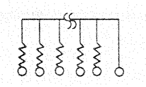
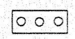
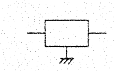
PCB – 1


CMEC UNIT CN305
SSDC UNIT CN114
CMEC UNIT CN304
CDP UNIT CN301(CDP2)
CDP UNIT CN301(CDP1)
PSSB UNIT
PSPB UNIT
CHANGER TRANSFORMER
AUDIO TRANSFORMER
IC109
IC110
IC102
IC107
IC106
Q101
IC105
IC103
IC104
IC108
IC101
CAUTION–REPLACE WITH SAME TYPE NO. ICP-N10,MFD.BY ROHM CO.,LTD.FOR IC109 AND IC110 ICP-N15,MFD.BY ROHM CO.,LTD.FOR IC107 ICP-N20,MFD.BY ROHM CO.,LTD.FOR IC108.
ATTENTION–EN CAS DE REMPLACEMENT DES FUSIBLES IC109 ET IC110 N'UTILISER QUE LA REFERENCE ICP-N10, DE CHEZ ROHM CO.,LTD IC107 N'UTILISER QUE LA REFERENCE ICP-N15 DE CHEZ ROHM CO.,LTD. IC108 N'UTILISER QUE LA REFERENCE ICP-N20 DE CHEZ ROHM CO.,LTD.
PSSB DWR1237-A DNX2200-C
CP1 V0
PSPB DWR1238-A DNX2201-C
HOT
VOLTAGE SELECTOR (S102)
VOLTAGE SELECTOR (S103)
240V
230V
220V
N.C.
120V
LIVE
NEUTRAL
CN151
CN152
CN153
CN154
CN155
CN156
CN157
CN163
CN164
FU101
FU102
FU103
FU104
FU105
FU106
FU107
FU108
FU109
FU110
FU111
FU112
FU113
FU114
FU115
L101
L102
C101
C102
C103
C104
C105
C106
C107
C108
C109
AC18V
AC9V
AC14V
AC11V
GND
DGIF UNIT CN407
AUDIO TRANSFORMER
CHANGER TRANSFORMER
(DNP1714-C)
AC INLET
POWER SWITCH (S101)

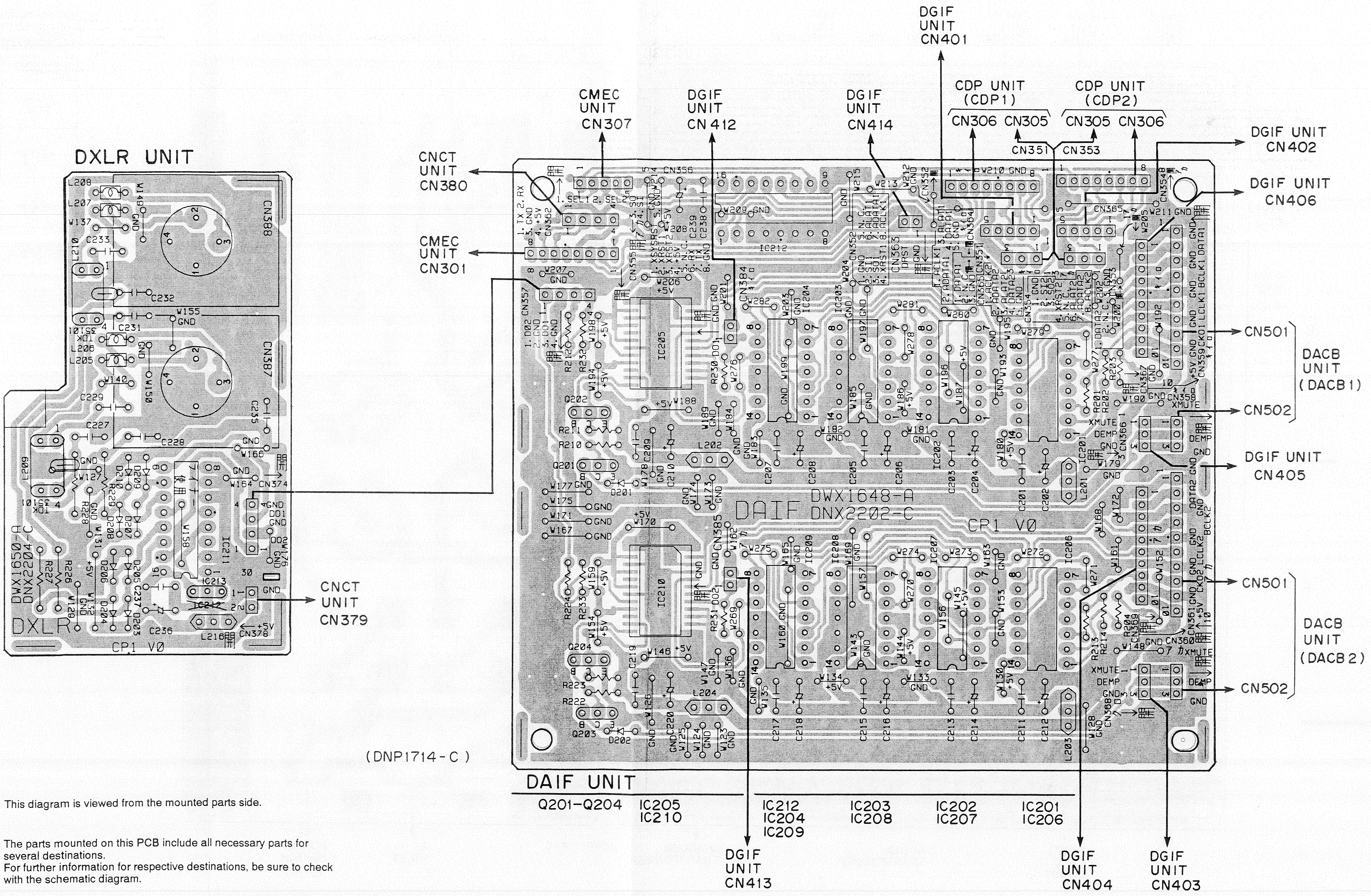
- This diagram is viewed from the mounted parts side.
- The parts mounted on this PCB include all necessary parts for several destinations.
  For further information for respective destinations, be sure to check with the schematic diagram.

NOTE FOR PCB DIAGRAMS:

1. Part numbers in PCB diagrams match those in the schematic diagrams.
2. A comparison between the main parts of PCB and schematic diagrams is shown below.

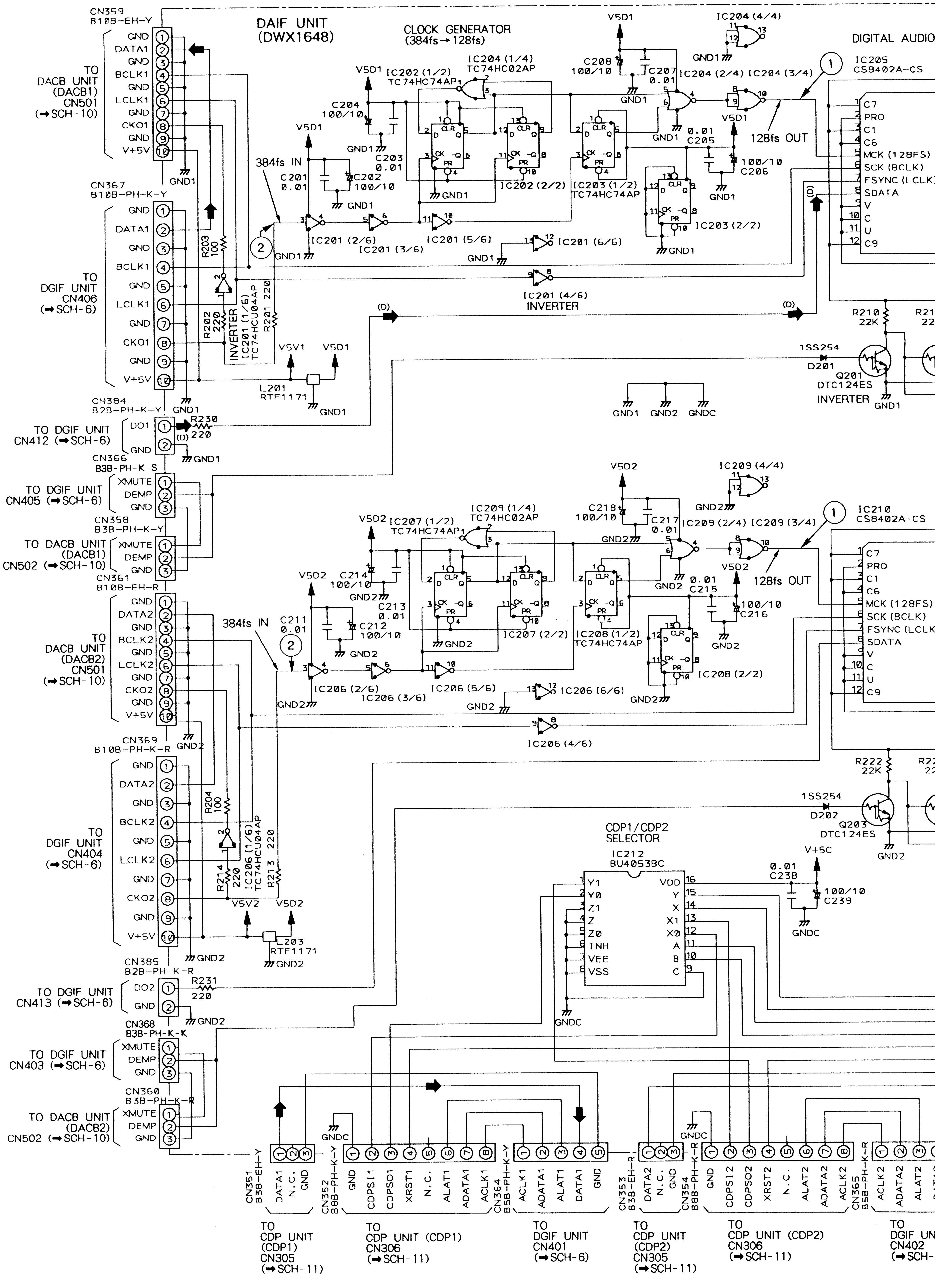
Symbol in PCB Diagrams	Symbol in Schematic Diagrams	Part Name
B C E		Transistor
B C E		Transistor with resistor
D G S		Field effect transistor
		Resistor array
		3-terminal regulator

4.3 DAIF AND DXLR UNITS

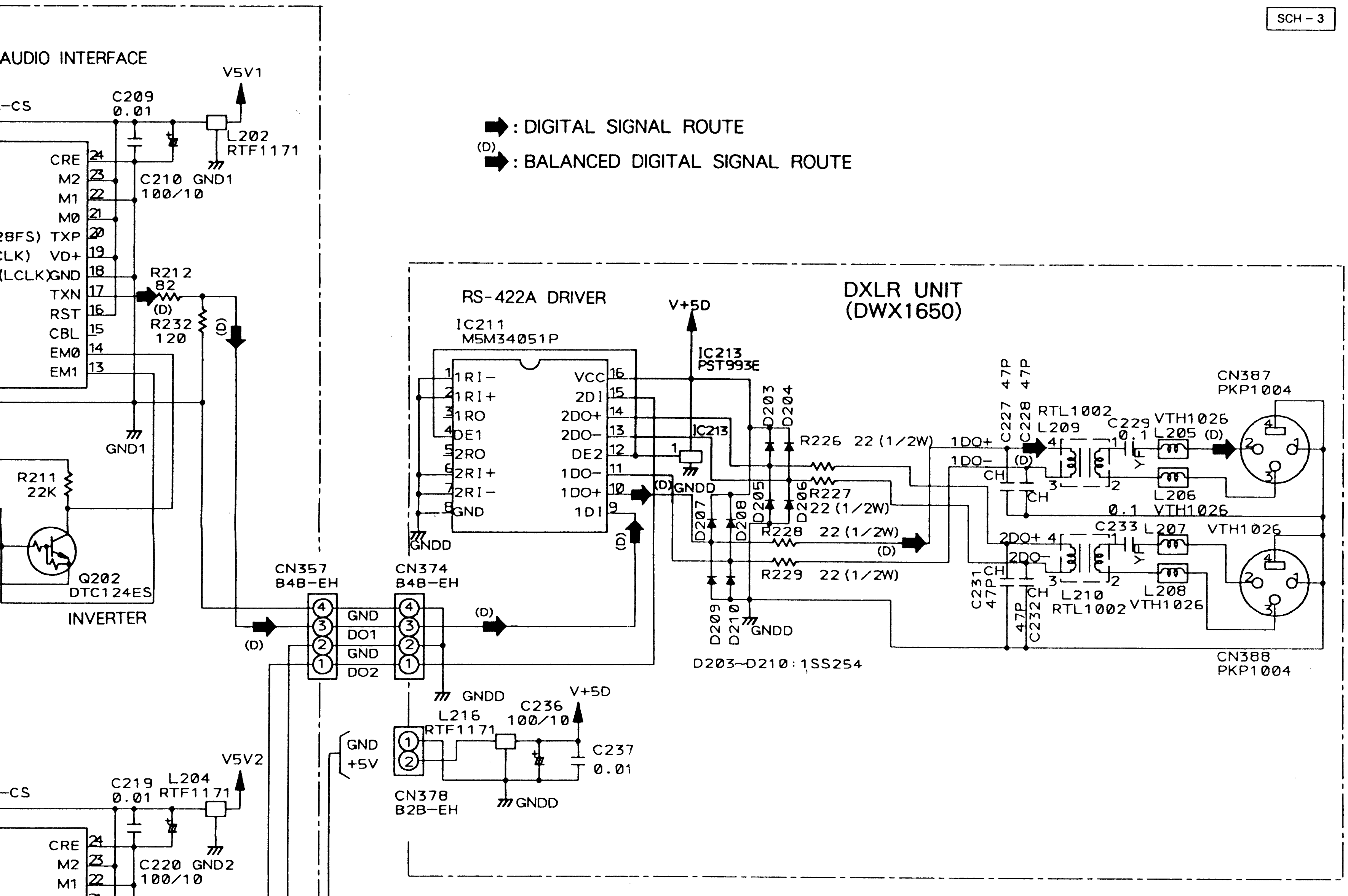

DXLR UNIT
CN388
CN387
CN374
DWX1650-A
DNX2204-C
DXLR
CP1 V0
CNCT UNIT CN379
CN378
CNCT UNIT CN380
CMEC UNIT CN301
CMEC UNIT CN307
DGIF UNIT CN412
DGIF UNIT CN414
DGIF UNIT CN401
CDP UNIT (CDP1)
CN306 CN305
CDP UNIT (CDP2)
CN305 CN306
CN351
CN353
DGIF UNIT CN402
DGIF UNIT CN406
CN501
CN502
DACB UNIT (DACB1)
DGIF UNIT CN405
CN501
CN502
DACB UNIT (DACB2)
DAIF
DWX1648-A
DNX2202-C
CP1 V0
(DNP1714-C)
DAIF UNIT
Q201-Q204
IC205
IC210
IC212
IC204
IC209
IC203
IC208
IC202
IC207
IC201
IC206
DGIF UNIT CN413
DGIF UNIT CN404
DGIF UNIT CN403

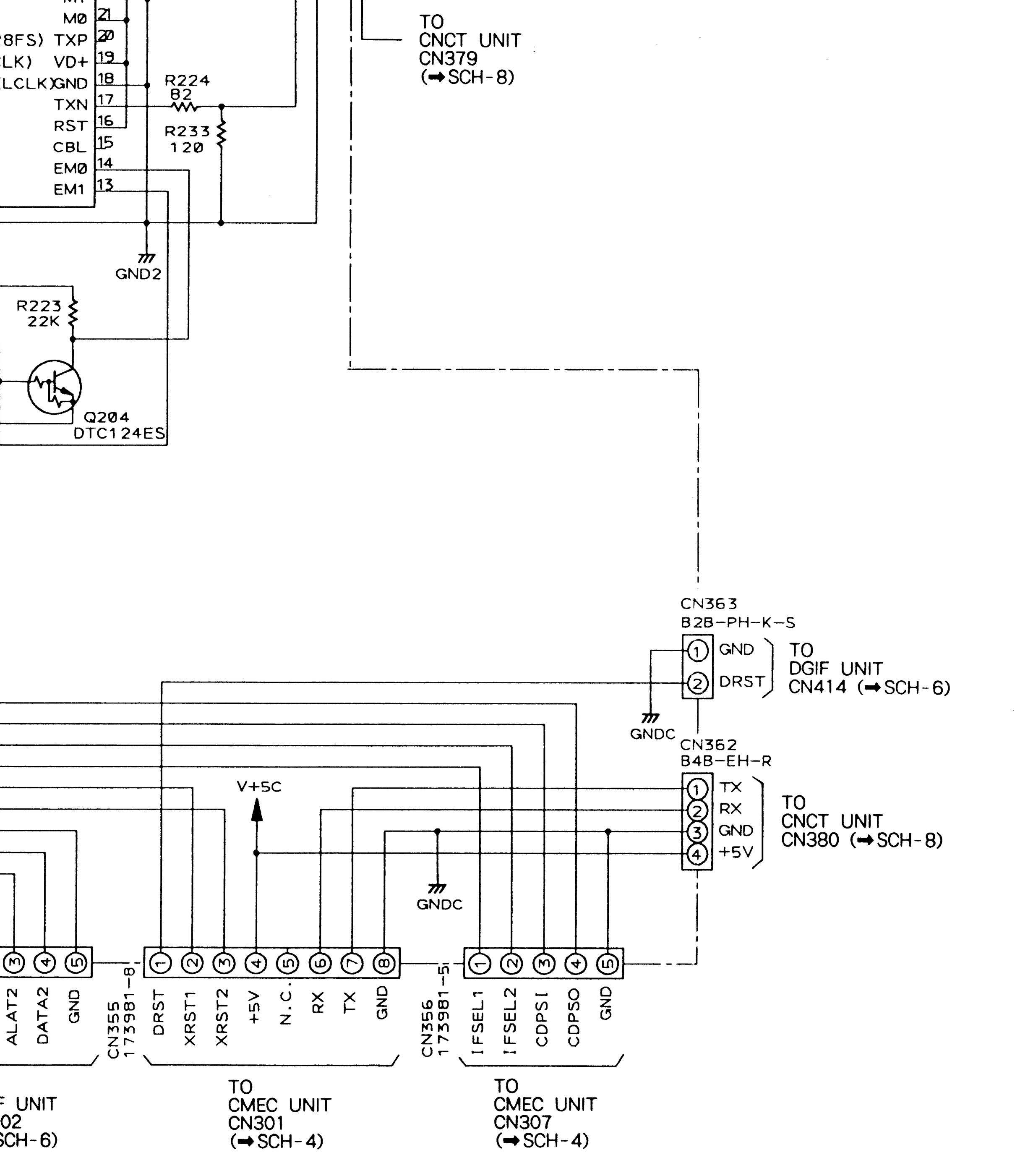
- This diagram is viewed from the mounted parts side.

- The parts mounted on this PCB include all necessary parts for several destinations.
For further information for respective destinations, be sure to check with the schematic diagram.


DAIF UNIT
(DWX1648)
CLOCK GENERATOR
(384fs→128fs)
DIGITAL AUDIO
CN359
B10B-EH-Y
GND
DATA1
BCLK1
LCLK1
CKO1
V+5V
TO
DACB UNIT
(DACB1)
CN501
(→SCH-10)
CN367
B10B-PH-K-Y
TO
DGIF UNIT
CN406
(→SCH-6)
GND1
R203
100
R202
220
R201
220
INVERTER
IC201 (1/6)
TC74HCU04AP
V5V1
V5D1
L201
RTF1171
CN384
B2B-PH-K-Y
DO1
R230
220
(D)
TO DGIF UNIT
CN412 (→SCH-6)
CN366
B3B-PH-K-S
XMUTE
DEMP
TO DGIF UNIT
CN405 (→SCH-6)
CN358
B3B-PH-K-Y
TO DACB UNIT
(DACB1)
CN502 (→SCH-10)
CN361
B10B-EH-R
DATA2
BCLK2
LCLK2
CKO2
TO
DACB UNIT
(DACB2)
CN501
(→SCH-10)
CN369
B10B-PH-K-R
GND2
TO
DGIF UNIT
CN404
(→SCH-6)
R204
100
R214
220
IC206 (1/6)
TC74HCU04AP
R213
220
V5V2
V5D2
L203
RTF1171
CN385
B2B-PH-K-R
DO2
R231
220
TO DGIF UNIT
CN413 (→SCH-6)
CN368
B3B-PH-K-K
TO DGIF UNIT
CN403 (→SCH-6)
CN360
B3B-PH-K-R
TO DACB UNIT
(DACB2)
CN502 (→SCH-10)
C204
100/10
C203
0.01
384fs IN
C201
0.01
C202
100/10
IC202 (1/2)
TC74HC74AP
IC204 (1/4)
TC74HC02AP
IC202 (2/2)
IC203 (1/2)
TC74HC74AP
IC203 (2/2)
V5D1
C208
100/10
C207
0.01
IC204 (4/4)
IC204 (2/4)
IC204 (3/4)
C205
0.01
C206
100/10
128fs OUT
IC205
CS8402A-CS
C7
PRO
C1
C6
MCK (128FS)
SCK (BCLK)
FSYNC (LCLK)
SDATA
V
C
U
C9
IC201 (2/6)
IC201 (3/6)
IC201 (5/6)
IC201 (6/6)
IC201 (4/6)
INVERTER
R210
22K
1SS254
D201
Q201
DTC124ES
INVERTER
GND1
GND2
GNDC
V5D2
IC209 (4/4)
C218
100/10
C217
0.01
IC209 (1/4)
TC74HC02AP
IC207 (1/2)
TC74HC74AP
IC209 (2/4)
IC209 (3/4)
IC210
CS8402A-CS
C214
100/10
C213
0.01
C211
0.01
C212
100/10
IC207 (2/2)
IC208 (1/2)
TC74HC74AP
IC208 (2/2)
C215
0.01
C216
100/10
IC206 (2/6)
IC206 (3/6)
IC206 (5/6)
IC206 (6/6)
IC206 (4/6)
R222
22K
1SS254
D202
Q203
DTC124ES
CDP1/CDP2
SELECTOR
IC212
BU4053BC
Y1
Y0
Z1
Z
Z0
INH
VEE
VSS
VDD
Y
X
X1
X0
A
B
C
V+5C
C238
0.01
C239
100/10
CN351
B3B-EH-Y
DATA1
N.C.
GND
CN352
B8B-PH-K-Y
CDPSI1
CDPSO1
XRST1
ALAT1
ADATA1
ACLK1
CN364
B5B-PH-K-Y
CN353
B3B-EH-R
CN354
B8B-PH-K-R
CDPSI2
CDPSO2
XRST2
ALAT2
ADATA2
ACLK2
CN365
B5B-PH-K-R
TO
CDP UNIT
(CDP1)
CN305
(→SCH-11)
TO
CDP UNIT (CDP1)
CN306
(→SCH-11)
TO
DGIF UNIT
CN401
(→SCH-6)
TO
CDP UNIT
(CDP2)
CN305
(→SCH-11)
TO
CDP UNIT (CDP2)
CN306
(→SCH-11)
TO
DGIF UN
CN402
(→SCH-

SCH - 3


➡ : DIGITAL SIGNAL ROUTE
(D) ➡ : BALANCED DIGITAL SIGNAL ROUTE
AUDIO INTERFACE
-CS
V5V1
C209 0.01
L202 RTF1171
C210 100/10
GND1
CRE 24
M2 23
M1 22
M0 21
(28FS) TXP 20
(CLK) VD+ 19
(LCLK) GND 18
TXN 17
RST 16
CBL 15
EM0 14
EM1 13
R212 82
R232 120
(D)
GND1
R211 22K
Q202 DTC124ES
INVERTER
CN357 B4B-EH
CN374 B4B-EH
GND
DO1
GND
DO2
GNDD
L216 RTF1171
C236 100/10
V+5D
C237 0.01
GND
+5V
CN378 B2B-EH
DXLR UNIT
(DWX1650)
RS-422A DRIVER
IC211 M5M34051P
1RI-
1RI+
1RO
DE1
2RO
2RI+
2RI-
GND
VCC
2DI
2DO+
2DO-
DE2
1DO-
1DO+
1DI
IC213 PST993E
D203
D204
D205
D206
D207
D208
D209
D210
R226 22 (1/2W)
R227 22 (1/2W)
R228 22 (1/2W)
R229 22 (1/2W)
1DO+
1DO-
2DO+
2DO-
C227 47P
C228 47P
C231 47P
C232 47P
RTL1002
L209
L210
C229 0.1
C233 0.1
VTH1026
L205
L206
L207
L208
CN387 PKP1004
CN388 PKP1004
AES/EBU CDP1
AES/EBU CDP2
DIGITAL OUT
D203~D210 : 1SS254
V5V2
C219 0.01
L204 RTF1171
C220 100/10
GND2


-CS
CRE 24
M2 23
M1 22
M0 21
(28FS) TXP 20
(CLK) VD+ 19
(LCLK) GND 18
TXN 17
RST 16
CBL 15
EM0 14
EM1 13
R224 82
R233 120
GND2
R223 22K
Q204 DTC124ES
TO CNCT UNIT CN379 (➡SCH-8)
CN363 B2B-PH-K-S
GND
DRST
TO DGIF UNIT CN414 (➡SCH-6)
GNDC
CN362 B4B-EH-R
TX
RX
GND
+5V
TO CNCT UNIT CN380 (➡SCH-8)
V+5C
GNDC
ALAT2
DATA2
GND
F UNIT
02
CH-6)
CN355 173981-8
DRST
XRST1
XRST2
+5V
N.C.
RX
TX
GND
TO CMEC UNIT CN301 (➡SCH-4)
CN356 173981-5
IFSEL1
IFSEL2
CDPSI
CDPSO
GND
TO CMEC UNIT CN307 (➡SCH-4)

VOLTAGE OF DAIF UNIT

IC205 (CS8402A-CS)
IC210 (CS8402A-CS)

Pin No.	Voltage (V)
1	5.0
2	–
3	5.0
4	–
5	2.5
6	2.3
7	2.5
8-11	–
12	5.0
13	2.9
14	–
15	3.3
16	5.0
17	2.3
18	–
19	5.0
20	2.5
21	5.0
22	–
23	5.0
24	–

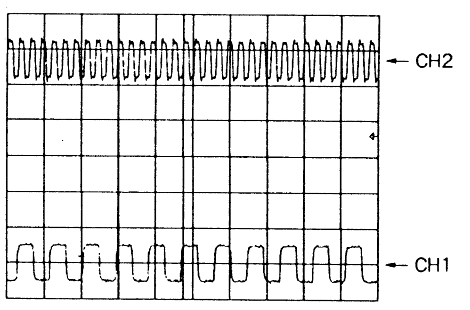
IC212 (BU4053BC)

Pin No.	Voltage (V)
1-9	–
10	4.9
11	4.9
12-15	–
16	4.9

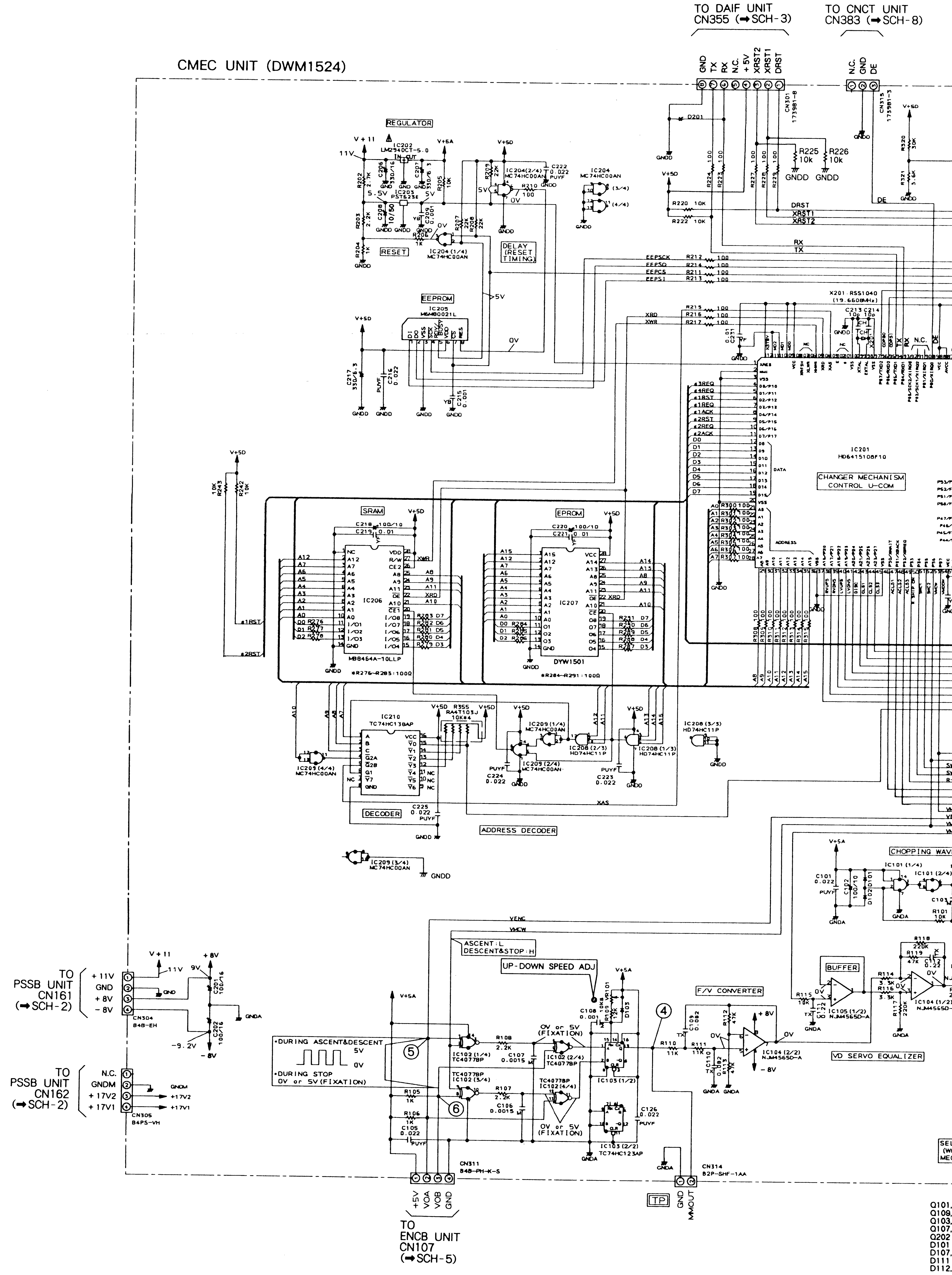
WAVEFORM OF DAIF UNIT

① CH1 : IC204, IC209 - pin 10
V : 5V/div. H : 200nS/div.

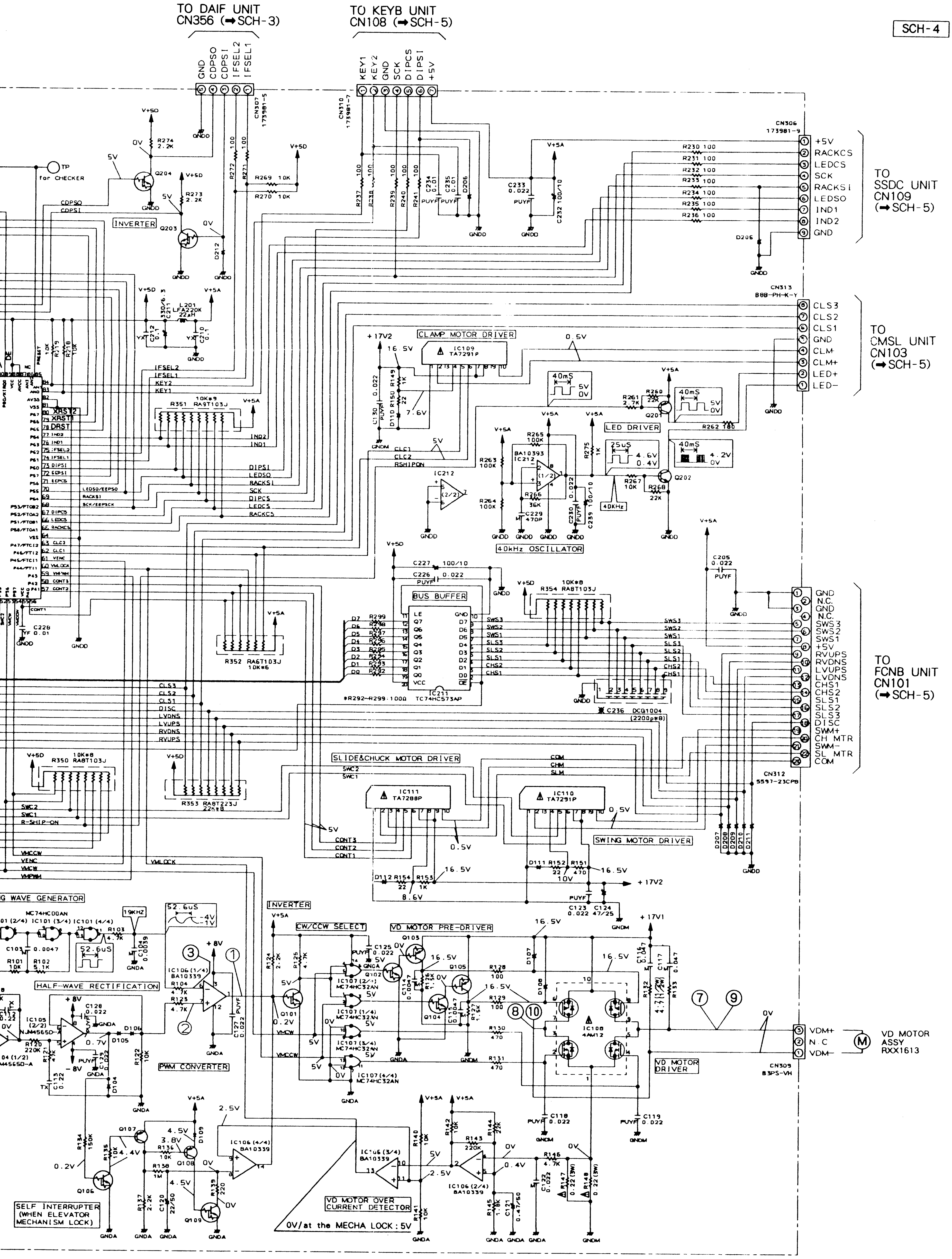
② CH2 : IC201, IC206 - pin 3
V : 5V/div. H : 200nS/div.



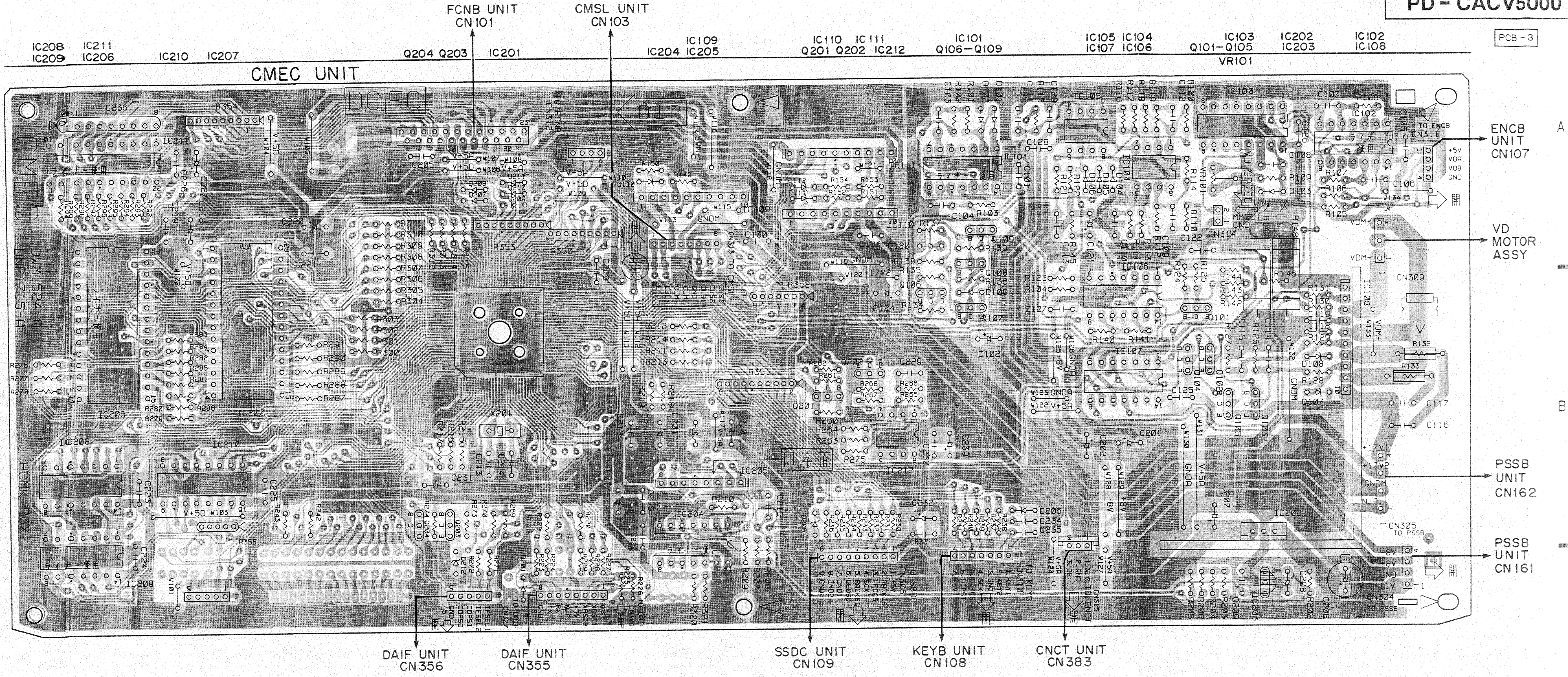
4.4 CMEC UNIT


TO DAIF UNIT
CN355 (➡SCH-3)
TO CNCT UNIT
CN383 (➡SCH-8)
CMEC UNIT (DWM1524)
GND TX RX N.C. +5V XRST2 XRST1 DRST
N.C. GND DE
CN301 173981-8
CN315 173981-3
REGULATOR
IC202 LM2940CT-5.0
IC203 PST623E
RESET
IC204 (1/4) MC74HC00AN
IC204 (2/4) MC74HC00AN
DELAY (RESET TIMING)
EEPROM
IC205 M6M80021L
IC201 HD6415108F10
CHANGER MECHANISM CONTROL U-COM
X201 RSS1040 (19.6608MHz)
SRAM
IC206 MB8464A-10LLP
*R276~R283 : 100Ω
EPROM
IC207 DYW1501
*R284~R291 : 100Ω
IC210 TC74HC138AP
R355 RA4T103J 10K*4
DECODER
ADDRESS DECODER
IC209 (1/4) MC74HC00AN
IC209 (2/4) MC74HC00AN
IC209 (3/4) MC74HC00AN
IC209 (4/4) MC74HC00AN
IC208 (1/3) HD74HC11P
IC208 (2/3) HD74HC11P
IC208 (3/3) HD74HC11P
CHOPPING WAVE
IC101 (1/4)
IC101 (2/4)
BUFFER
IC105 (1/2) NJM4565D-A
IC104 (1/2) NJM4565D-A
IC104 (2/2) NJM4565D-A
VD SERVO EQUALIZER
F/V CONVERTER
IC103 (1/2)
IC103 (2/2) TC74HC123AP
IC102 (1/4) TC4077BP
IC102 (2/4) TC4077BP
IC102 (3/4) TC4077BP
IC102 (4/4) TC4077BP
ASCENT : L
DESCENT&STOP : H
UP-DOWN SPEED ADJ
•DURING ASCENT&DESCENT
5V
0V
•DURING STOP
0V or 5V (FIXATION)
0V or 5V (FIXATION)
⑤
⑥
④
TO PSSB UNIT CN161 (➡SCH-2)
+11V GND +8V -8V
CN304 B4B-EH
TO PSSB UNIT CN162 (➡SCH-2)
N.C. GNDM +17V2 +17V1
CN305 B4PS-VH
CN311 B4B-PH-K-S
+5V VOA VOB GND
TO ENCB UNIT CN107 (➡SCH-5)
CN314 B2P-SHF-1AA
TP
GND MMOUT
VENC
VMCW
XAS
EEPSCK EEPSO EEPCS EEPSI
XRD XWR
DATA
ADDRESS
GNDD GNDA
V+11 V+5A V+5D

SCH-4


TO DAIF UNIT
CN356 (➡SCH-3)
GND
CDPSO
CDPSI
IFSEL2
IFSEL1
CN307
173981-5
TO KEYB UNIT
CN108 (➡SCH-5)
KEY1
KEY2
GND
SCK
DIPCS
DIPSI
+5V
CN310
173981-7
TP
for CHECKER
INVERTER
Q203
Q204
L201
LFA220K
22μH
CN306
173981-9
+5V
RACKCS
LEDCS
SCK
RACKSI
LEDSO
IND1
IND2
GND
TO
SSDC UNIT
CN109
(➡SCH-5)
CN313
B8B-PH-K-Y
CLS3
CLS2
CLS1
GND
CLM-
CLM+
LED+
LED-
TO
CMSL UNIT
CN103
(➡SCH-5)
CLAMP MOTOR DRIVER
IC109
TA7291P
+17V2
LED DRIVER
Q201
Q202
40mS
25uS
40KHz
BA10393
IC212
40kHz OSCILLATOR
R351 RA9T103J
10K*9
R352 RA6T103J
10K*6
BUS BUFFER
IC211
TC74HC573AP
*R292~R299:100Ω
R354 RA8T103J
10K*8
C236 DCG1004
(2200p*8)
GND
N.C.
GND
N.C.
SWS3
SWS2
SWS1
+5V
RVUPS
RVDNS
LVUPS
LVDNS
CHS1
CHS2
SLS1
SLS2
SLS3
DISC
SWM+
CH MTR
SWM-
SL MTR
COM
CN312
5597-23CPB
TO
FCNB UNIT
CN101
(➡SCH-5)
R350 RA8T103J
10K*8
R353 RA8T223J
22K*8
SLIDE&CHUCK MOTOR DRIVER
IC111
TA7288P
IC110
TA7291P
SWING MOTOR DRIVER
CONT3
CONT2
CONT1
+17V2
G WAVE GENERATOR
MC74HC00AN
19KHZ
52.6uS
HALF-WAVE RECTIFICATION
IC105
NJM4565D
IC106 (1/4)
BA10339
PWM CONVERTER
INVERTER
CW/CCW SELECT
IC107
MC74HC32AN
VD MOTOR PRE-DRIVER
Q101
Q102
Q103
Q104
Q105
IC108
4AM12
VD MOTOR
DRIVER
+17V1
VDM+
N.C
VDM-
CN309
B3PS-VH
VD MOTOR
ASSY
RXX1613
IC106 (4/4)
BA10339
IC106 (3/4)
BA10339
IC106 (2/4)
BA10339
Q106
Q107
Q108
Q109
SELF INTERRUPTER
(WHEN ELEVATOR
MECHANISM LOCK)
VD MOTOR OVER
CURRENT DETECTOR
0V/at the MECHA LOCK : 5V

Q101, Q102, Q104, Q106, : DTC124ES
Q109, Q203, Q204
Q103, Q105 : DTA124ES
Q107, Q108, Q201 : 2SA1048
Q202 : 2SC2458
D101 – D106, D109 : 1SS254
D107, D108, D110 : MTZJ7.5B
D111 : MTZJ10B
D112, D201, D205 – D212 : MTZJ8.2B


IC208
IC209
IC211
IC206
IC210
IC207
Q204 Q203
IC201
IC204 IC205
IC109
IC110 IC111
Q201 Q202 IC212
IC101
Q106–Q109
IC105 IC104
IC107 IC106
IC103
Q101–Q105
VR101
IC202
IC203
IC102
IC108
CMEC UNIT
FCNB UNIT
CN101
CMSL UNIT
CN103
ENCB UNIT
CN107
VD MOTOR ASSY
PSSB UNIT
CN162
PSSB UNIT
CN161
DAIF UNIT
CN356
DAIF UNIT
CN355
SSDC UNIT
CN109
KEYB UNIT
CN108
CNCT UNIT
CN383
CMEC
DWM1524-A
DNP1715-A
HCMK-P3X
CN309
CN305 TO PSSB
CN304 TO PSSB
CN311 TO ENCB

- This diagram is viewed from the pink colored foil side.
- This PCB is double sided.

- The parts mounted on this PCB include all necessary parts for several destinations.
For further information for respective destinations, be sure to check with the schematic diagram.

WAVEFORMS OF CMEC UNIT

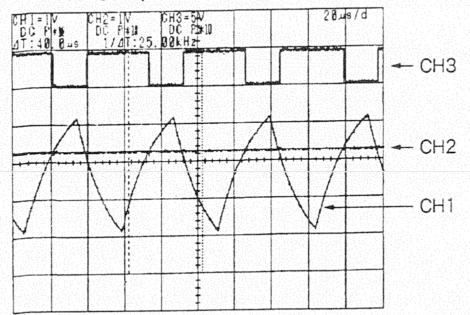
· DC range without notice

① CH3 : IC106 – pin 1
V : 5V/div. H : 20 μ S/div.

② CH2 : IC106 – pin 7
V : 1V/div. H : 20 μ S/div.

③ CH1 : IC106 – pin 6
V : 1V/div. H : 20 μ S/div.

· VH UP (MAX SPEED)

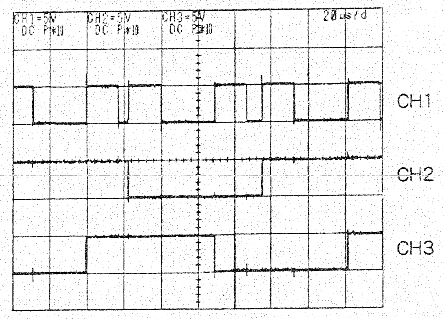


④ CH1 : IC103 – pin 13
V : 5V/div. H : 20 μ S/div.

⑤ CH2 : IC102 – pin 1
V : 5V/div. H : 20 μ S/div.

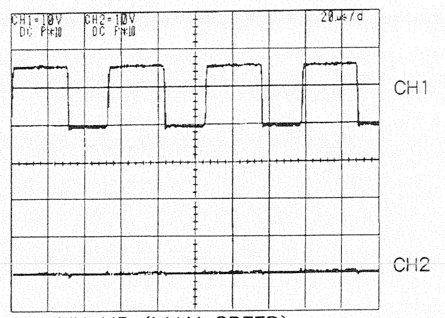
⑥ CH3 : IC102 – pin 8
V : 5V/div. H : 20 μ S/div.

· VH UP (MAX SPEED)



⑦ CH1 : IC108 – pin 5, 9
V : 10V/div. H : 20 μ S/div.

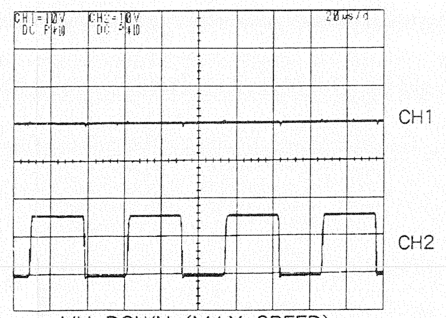
⑧ CH2 : IC108 – pin 3, 7
V : 10V/div. H : 20 μ S/div.



· VH UP (MAX SPEED)

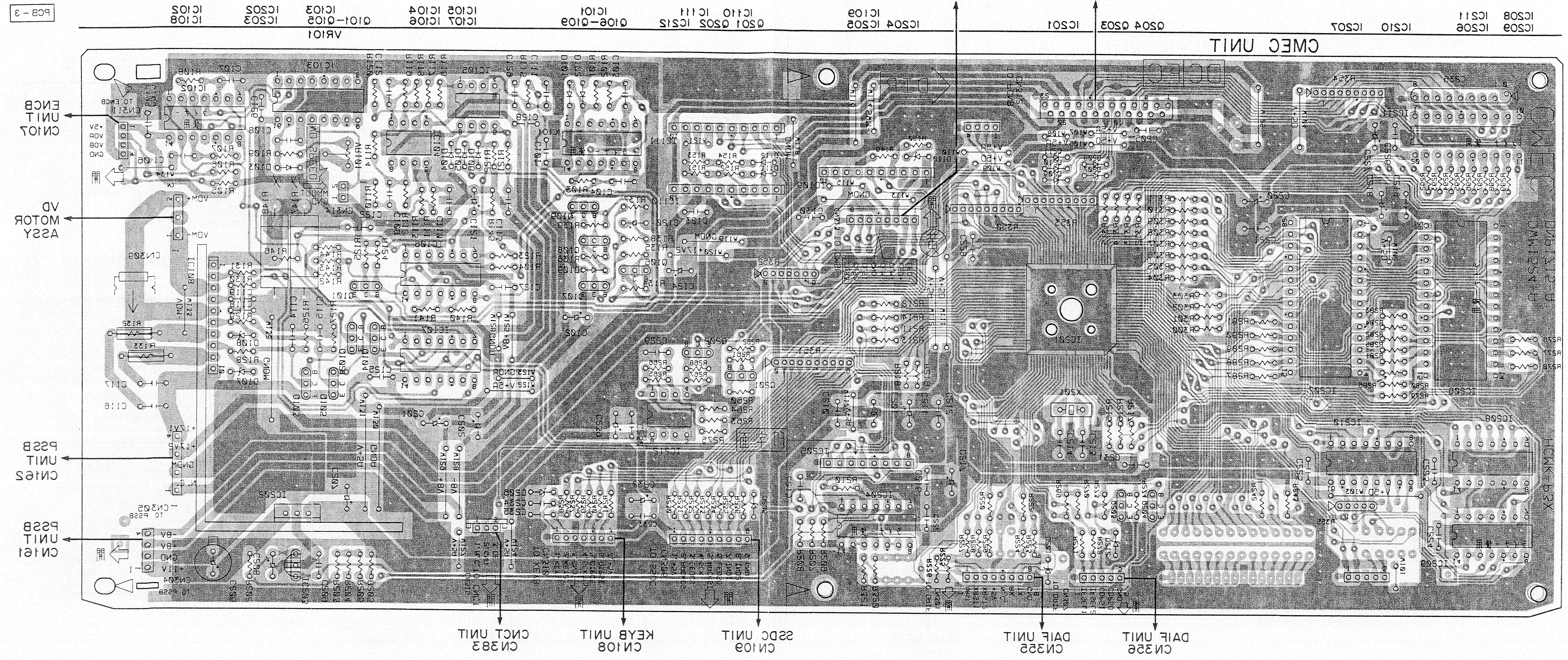
⑨ CH1 : IC108 – pin 5, 9
V : 10V/div. H : 20 μ S/div.

⑩ CH2 : IC108 – pin 3, 7
V : 10V/div. H : 20 μ S/div.



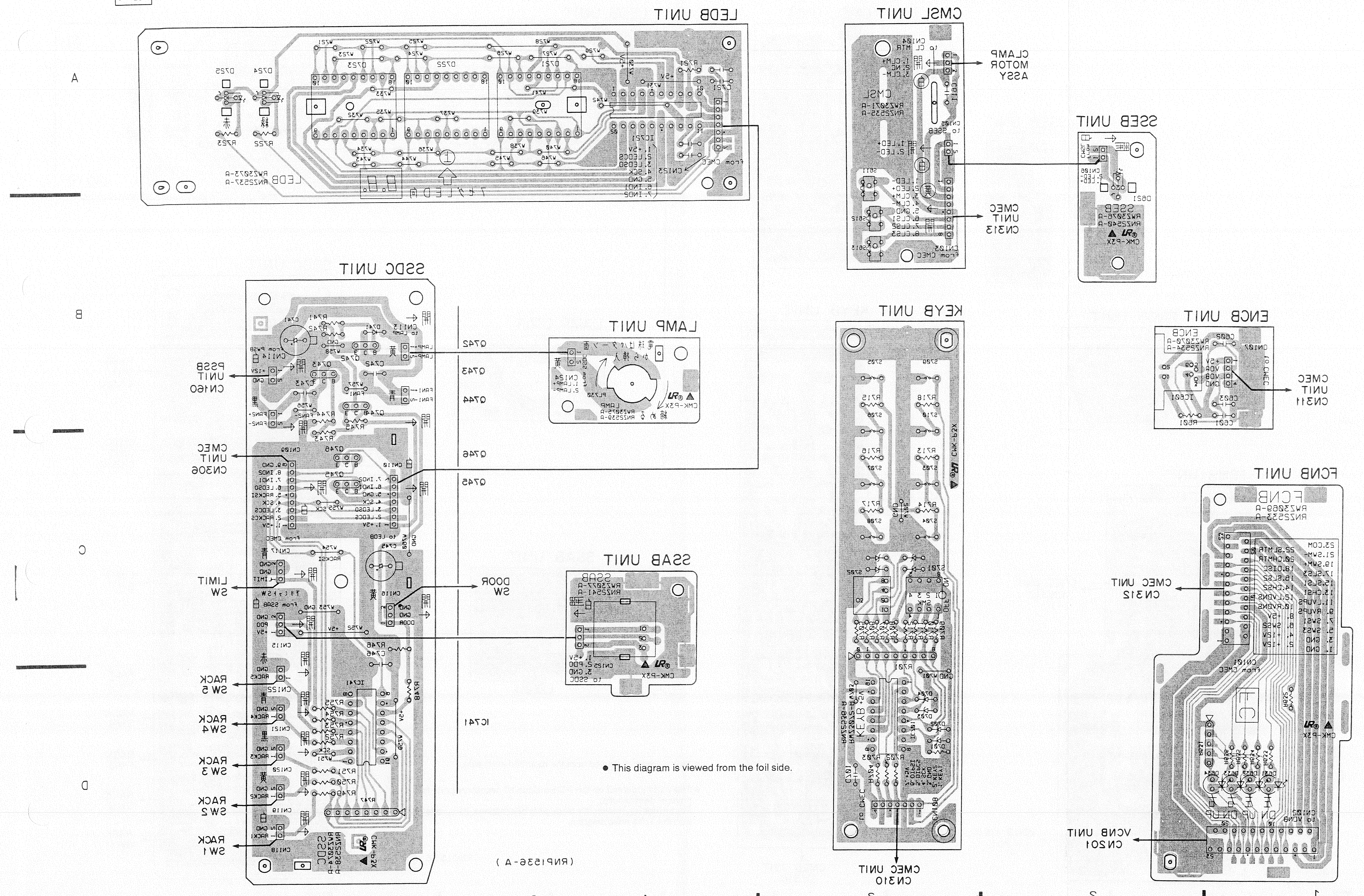
· VH DOWN (MAX SPEED)

CAC - V5000,
PD - CACV5000


PCB - 3
IC102 IC108
IC202 IC203
IC103 Q101–Q105 VR101
IC105 IC104 IC107 IC106
IC101 Q106–Q109
IC110 IC111 Q201 Q202 IC212
IC109 IC204 IC205
IC201 Q204 Q203
IC207 IC210
IC211 IC206
IC208 IC209
CMSL UNIT CN103
FCNB UNIT CN101
CMEC UNIT
ENCB UNIT CN107
VD MOTOR ASSY
PSSB UNIT CN162
PSSB UNIT CN161
CNCT UNIT CN383
KEYB UNIT CN108
SSDC UNIT CN109
DAIF UNIT CN355
DAIF UNIT CN356

- This diagram is viewed from the gray colored foil side.
- This PCB is double sided.

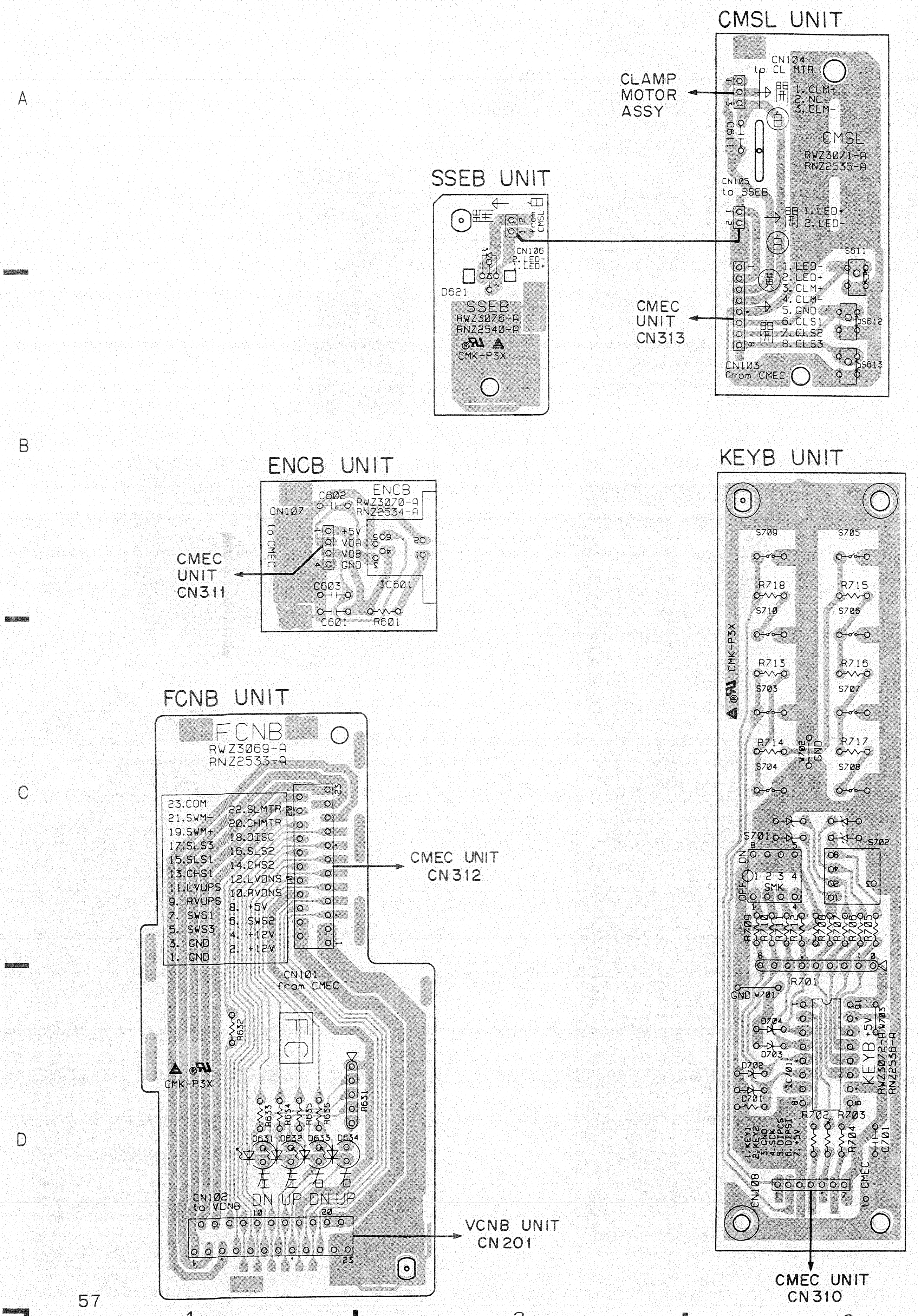
4.5 FCNB, ENCB, CMSL, KEYB, LEDB, SSDC, LAMP, SSEB AND SSAB UNITS

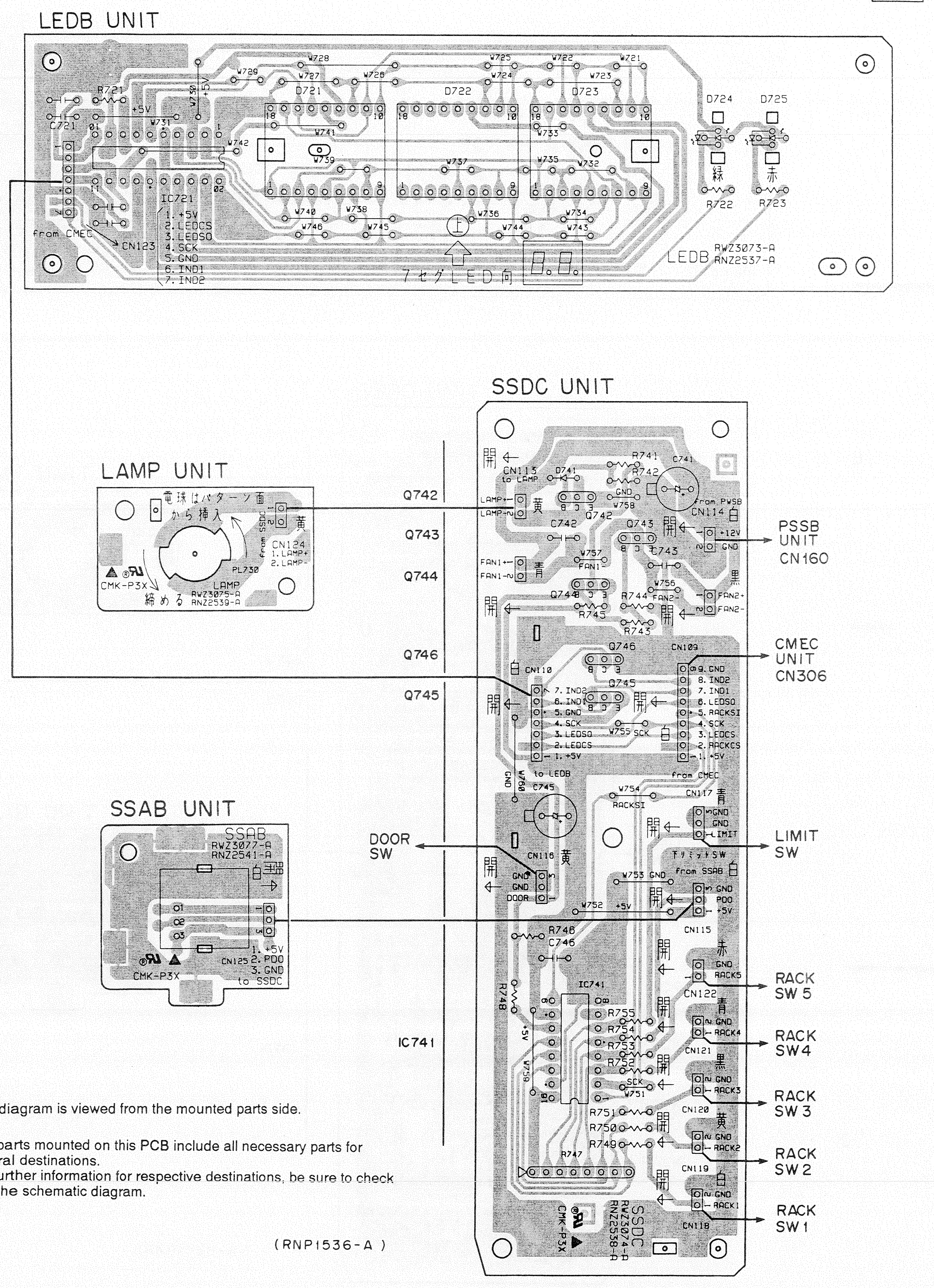

LEDB UNIT
CMSL UNIT
CLAMP MOTOR ASSY
SSEB UNIT
CMEC UNIT CN313
SSDC UNIT
LAMP UNIT
KEYB UNIT
ENCB UNIT
CMEC UNIT CN311
FCNB UNIT
PSSB UNIT CN160
CMEC UNIT CN306
SSAB UNIT
LIMIT SW
DOOR SW
CMEC UNIT CN312
RACK SW 5
RACK SW 4
RACK SW 3
RACK SW 2
RACK SW 1
VCNB UNIT CN201
CMEC UNIT CN310
Q742
Q743
Q744
Q746
Q745
IC741
A
B
C
D
1
2
3
4
5
6

● This diagram is viewed from the foil side.

(RNP1536-A)

4.5 FCNB, ENCB, CMSL, KEYB, LEDB, SSDC, LAMP, SSEB AND SSAB UNITS

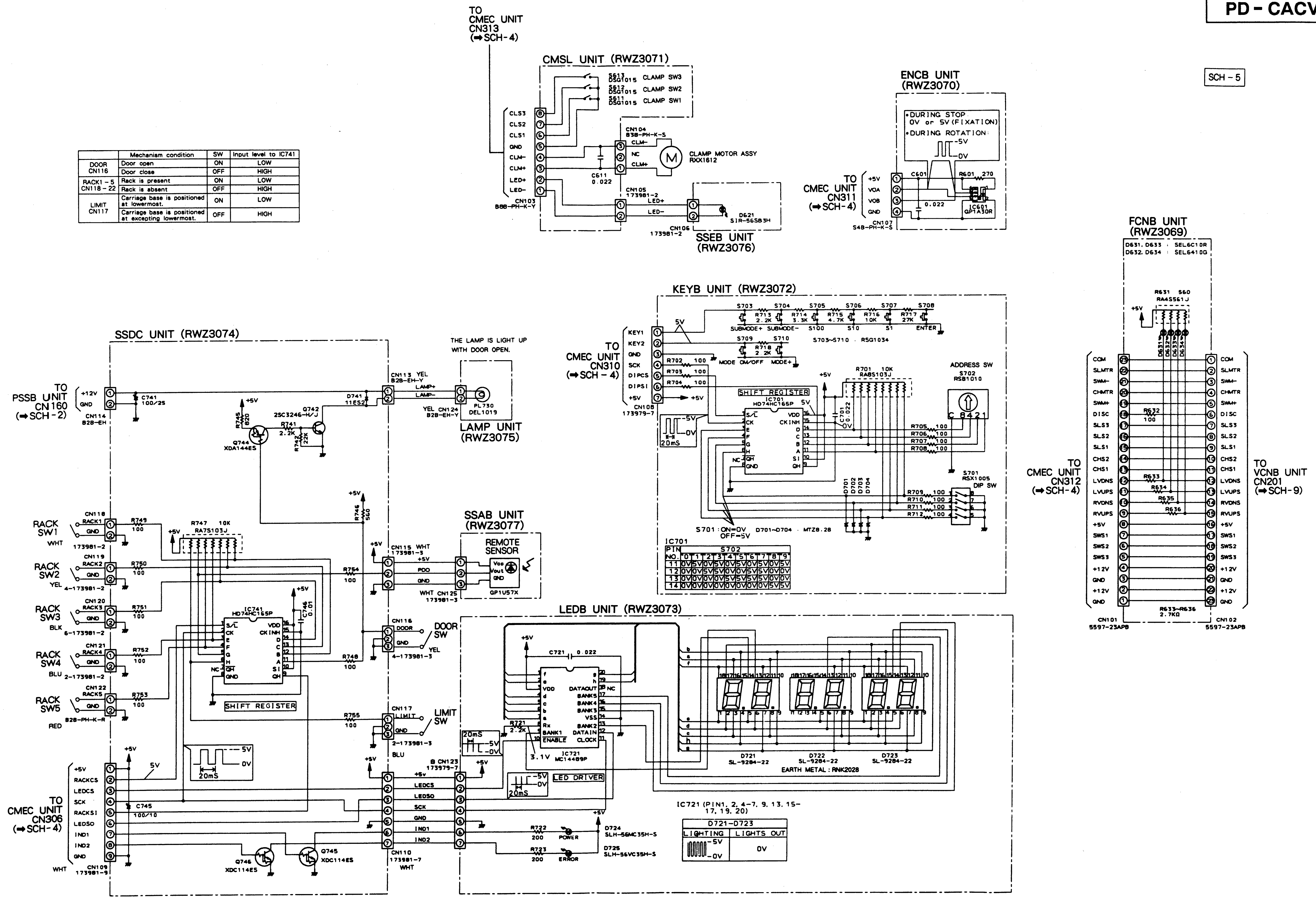

CMSL UNIT
CLAMP MOTOR ASSY
CN104 to CL MTR
1. CLM+
2. NC
3. CLM-
CMSL
RWZ3071-A
RNZ2535-A
CN105 to SSEB
1. LED+
2. LED-
CMEC UNIT CN313
1. LED-
2. LED+
3. CLM+
4. CLM-
5. GND
6. CLS1
7. CLS2
8. CLS3
S611
S612
S613
CN103 from CMEC
SSEB UNIT
CN105
1. LED-
2. LED+
D621
SSEB
RWZ3076-A
RNZ2540-A
CMK-P3X
ENCB UNIT
ENCB
C602
RWZ3070-A
RNZ2534-A
CN107
to CMEC
+5V
VOA
VOB
GND
CMEC UNIT CN311
C603
IC601
C601
R601
KEYB UNIT
S709
S705
R718
R715
S710
S706
R713
R716
S703
S707
R714
R717
S704
S708
S701
S702
R709
R701
R702
R703
R704
D701
D702
D703
D704
IC701
W701
C701
KEYB
RWZ3072-A
RNZ2536-A
CMK-P3X
1. KEY1
2. KEY2
3. GND
4. SCK
5. DIPSI
6. +5V
CN108
to CMEC
CMEC UNIT CN310
FCNB UNIT
FCNB
RWZ3069-A
RNZ2533-A
23. COM
21. SWM-
19. SWM+
17. SLS3
15. SLS1
13. CHS1
11. LVUPS
9. RVUPS
7. SWS1
5. SWS3
3. GND
1. GND
22. SLMTR
20. CHMTR
18. DISC
16. SLS2
14. CHS2
12. LVDNS
10. RVDNS
8. +5V
6. SWS2
4. +12V
2. +12V
CMEC UNIT CN312
CN101 from CMEC
FC
R632
R631
R633
R634
R635
R636
D631
D632
D633
D634
CMK-P3X
CN102 to VLNB
DN UP DN UP
VCNB UNIT CN201


LEDB UNIT
R721
C721
+5V
W728
W727
W726
W725
W724
W722
W721
W723
D721
D722
D723
D724
D725
W741
W742
W739
W737
W735
W733
W732
W731
W730
IC721
1. +5V
2. LEDCS
3. LEDSO
4. SCK
5. GND
6. IND1
7. IND2
from CMEC
CN123
W740
W738
W746
W745
W736
W734
W744
W743
7セグLED面
R722
R723
LEDB
RWZ3073-A
RNZ2537-A
LAMP UNIT
電球はパターン面から挿入
from SSDC
CN124
1. LAMP+
2. LAMP-
PL730
LAMP
RWZ3075-A
RNZ2539-A
CMK-P3X
締める
SSAB UNIT
SSAB
RWZ3077-A
RNZ2541-A
CN125
1. +5V
2. PDO
3. GND
to SSDC
CMK-P3X
SSDC UNIT
Q742
Q743
Q744
Q746
Q745
IC741
CN113 to LAMP
D741
R741
R742
C741
LAMP+
LAMP-
GND
W758
from PWSB
CN114
C742
Q742
Q743
C743
+12V
GND
PSSB UNIT CN160
FAN1+
FAN1-
W757
FAN1
Q744
R744
R745
R743
W756
FAN2+
FAN2-
CN110
Q746
Q745
CN109
7. IND2
6. IND1
5. GND
4. SCK
3. LEDSO
2. LEDCS
1. +5V
to LEDB
W755 SCK
9. GND
8. IND2
7. IND1
6. LEDSO
5. RACKSI
4. SCK
3. LEDCS
2. RACKCS
1. +5V
from CMEC
CMEC UNIT CN306
C745
W754
RACKSI
CN117
GND
GND
LIMIT
LIMIT SW
DOOR SW
CN116
GND
GND
DOOR
W753
GND
from SSAB
W752
+5V
GND
PDO
+5V
CN115
R746
C746
R748
GND
RACK5
CN122
RACK SW 5
IC741
R755
R754
R753
R752
SCK
W751
GND
RACK4
CN121
RACK SW 4
GND
RACK3
CN120
RACK SW 3
R751
R750
R749
R747
GND
RACK2
CN119
RACK SW 2
GND
RACK1
CN118
RACK SW 1
SSDC
RWZ3074-A
RNZ2538-A
CMK-P3X

- This diagram is viewed from the mounted parts side.
- The parts mounted on this PCB include all necessary parts for several destinations.
For further information for respective destinations, be sure to check with the schematic diagram.

(RNP1536-A)

SCH - 5


TO CMEC UNIT CN313 (➡SCH-4)
CMSL UNIT (RWZ3071)
S613 DSG1015 CLAMP SW3
S612 DSG1015 CLAMP SW2
S611 DSG1015 CLAMP SW1
CLS3
CLS2
CLS1
GND
CLM−
CLM+
LED+
LED−
CN103 B8B-PH-K-Y
CN104 B3B-PH-K-S
CLAMP MOTOR ASSY RXX1612
C611 0.022
CN105 173981-2
D621 SIR-56SB3H
CN106 173981-2
SSEB UNIT (RWZ3076)
ENCB UNIT (RWZ3070)
•DURING STOP 0V or 5V (FIXATION)
•DURING ROTATION -5V -0V
TO CMEC UNIT CN311 (➡SCH-4)
+5V
VOA
VOB
GND
C601
R601 270
0.022
IC601 GP1A30R
CN107 S4B-PH-K-S
FCNB UNIT (RWZ3069)
D631, D633 : SEL6C10R
D632, D634 : SEL6410G
R631 560 RA4S561J
TO CMEC UNIT CN312 (➡SCH-4)
TO VCNB UNIT CN201 (➡SCH-9)
COM
SLMTR
SWM−
CHMTR
SWM+
DISC
SLS3
SLS2
SLS1
CHS2
CHS1
LVDNS
LVUPS
RVDNS
RVUPS
+5V
SWS1
SWS2
SWS3
+12V
GND
R632 100
R633~R636 2.7KΩ
CN101 5597-23APB
CN102 5597-23APB
KEYB UNIT (RWZ3072)
TO CMEC UNIT CN310 (➡SCH-4)
KEY1
KEY2
GND
SCK
DIPCS
DIPSI
+5V
CN108 173979-7
S703 S704 S705 S706 S707 S708
SUBMODE+ SUBMODE− S100 S10 S1 ENTER
S709 S710 MODE ON/OFF MODE+
S703~S710 : RSG1034
R701 10K RA8S103J
SHIFT REGISTER
IC701 HD74HC165P
ADDRESS SW S702 RSB1010
S701 RSX1005 DIP SW
20mS
S701 : ON=0V OFF=5V
D701~D704 : MTZ8.2B
SSDC UNIT (RWZ3074)
TO PSSB UNIT CN160 (➡SCH-2)
+12V
GND
CN114 B2B-EH
C741 100/25
Q742 2SC3246-H/J
Q744 XDA144ES
R741 2.2K
D741 11ES2
CN113 YEL B2B-EH-Y
THE LAMP IS LIGHT UP WITH DOOR OPEN.
PL730 DEL1019
YEL CN124 B2B-EH-Y
LAMP UNIT (RWZ3075)
RACK SW1
RACK SW2
RACK SW3
RACK SW4
RACK SW5
R747 10K RA7S103J
IC741 HD74HC165P
SHIFT REGISTER
SSAB UNIT (RWZ3077)
REMOTE SENSOR
GP1U57X
CN115 WHT 173981-3
DOOR SW
LIMIT SW
CN116 4-173981-3
CN117 2-173981-3
TO CMEC UNIT CN306 (➡SCH-4)
+5V
RACKCS
LEDCS
SCK
RACKSI
LEDSO
IND1
IND2
GND
CN109 173981-9
C745 100/10
Q746 XDC114ES
Q745 XDC114ES
CN110 173981-7
B CN123 173979-7
LEDB UNIT (RWZ3073)
C721 0.022
IC721 MC14489P
LED DRIVER
3.1V
D721 SL-9284-22
D722 SL-9284-22
D723 SL-9284-22
EARTH METAL : RNK2028
R722 200 POWER
R723 200 ERROR
D724 SLH-56MC35H-S
D725 SLH-56VC35H-S
IC721 (PIN1, 2, 4-7, 9, 13, 15-17, 19, 20)
D721-D723
LIGHTING -5V -0V
LIGHTS OUT 0V

	Mechanism condition	SW	Input level to IC741
DOOR CN116	Door open	ON	LOW
	Door close	OFF	HIGH
RACK1 – 5 CN118 – 22	Rack is present	ON	LOW
	Rack is absent	OFF	HIGH
LIMIT CN117	Carriage base is positioned at lowermost.	ON	LOW
	Carriage base is positioned at excepting lowermost.	OFF	HIGH

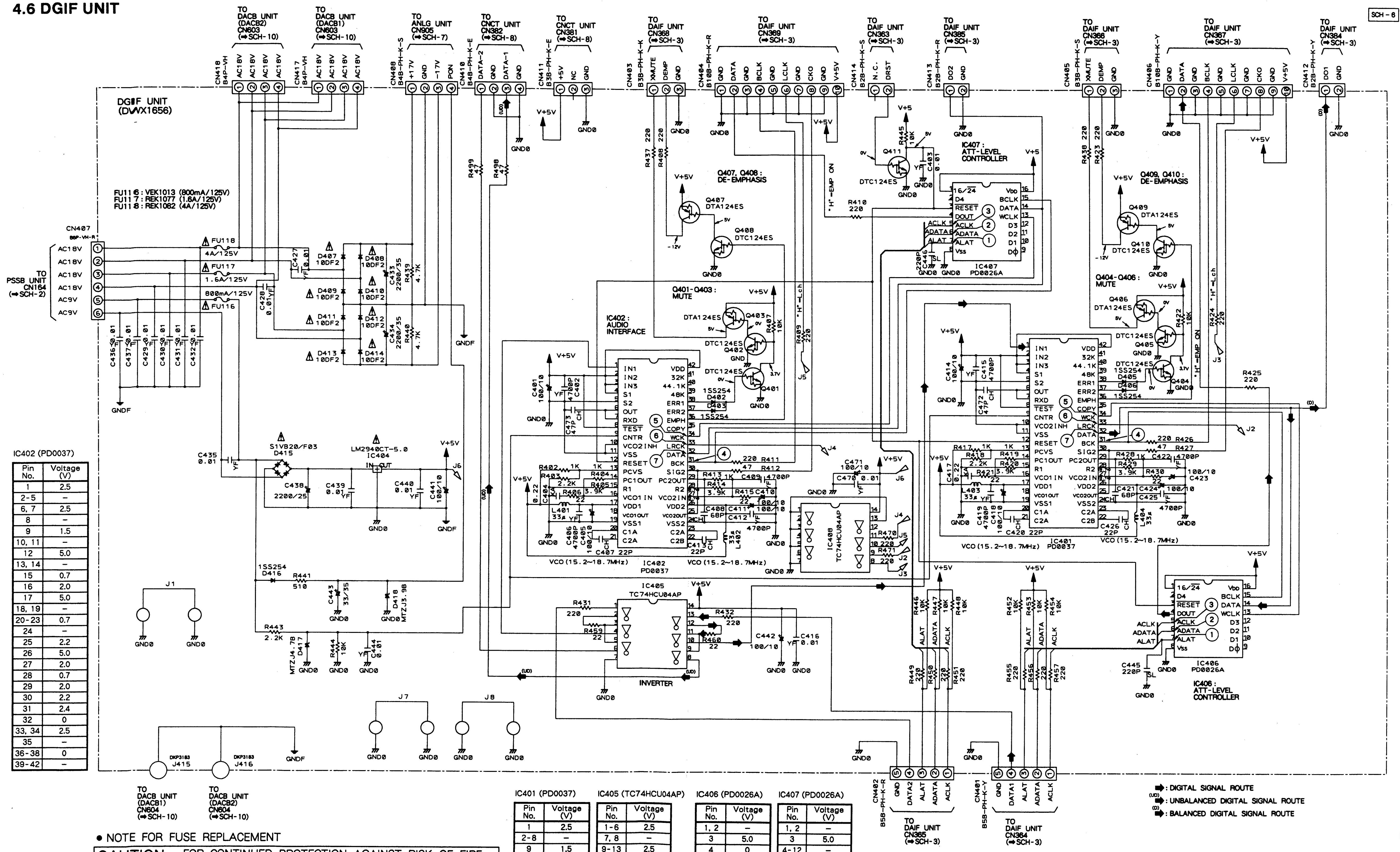
IC701

PIN NO.	S702 0	1	2	3	4	5	6	7	8	9
11	0V	5V	0V	5V	0V	5V	0V	5V	0V	5V
12	0V	0V	5V	5V	0V	0V	5V	5V	0V	0V
13	0V	0V	0V	0V	5V	5V	5V	5V	0V	0V
14	0V	0V	0V	0V	0V	0V	0V	0V	5V	5V

SCH-5 FCNB UNIT, ENCB UNIT, CMSL UNIT, KEYB UNIT, LEDB UNIT, SSDC UNIT, LAMP UNIT, SSEB UNIT, SSAB UNIT

FCNB UNIT, ENCB UNIT, CMSL UNIT, KEYB UNIT, LEDB UNIT, SSDC UNIT, LAMP UNIT, SSEB UNIT, SSAB UNIT **SCH-5**

4.6 DGIF UNIT


SCH-6
DGIF UNIT
(DWX1656)
TO DACB UNIT (DACB2) CN603 (➡SCH-10)
TO DACB UNIT (DACB1) CN603 (➡SCH-10)
TO ANLG UNIT CN905 (➡SCH-7)
TO CNCT UNIT CN382 (➡SCH-8)
TO CNCT UNIT CN381 (➡SCH-8)
TO DAIF UNIT CN368 (➡SCH-3)
TO DAIF UNIT CN369 (➡SCH-3)
TO DAIF UNIT CN363 (➡SCH-3)
TO DAIF UNIT CN385 (➡SCH-3)
TO DAIF UNIT CN366 (➡SCH-3)
TO DAIF UNIT CN367 (➡SCH-3)
TO DAIF UNIT CN384 (➡SCH-3)
CN418 B4P-VH
CN417 B4P-VH
CN408 B4B-PH-K-S
CN410 B4B-PH-K-E
CN411 B3B-PH-K-E
CN403 B3B-PH-K-K
CN404 B10B-PH-K-R
CN414 B2B-PH-K-S
CN413 B2B-PH-K-R
CN405 B3B-PH-K-S
CN406 B10B-PH-K-Y
CN412 B2B-PH-K-Y
AC18V
+17V
GND
-17V
PON
DATA-2
DATA-1
+5V
NC
XMUTE
DEMP
DATA
BCLK
LCLK
CKO
V+5V
N.C.
DRST
DO2
DO1
FU116: VEK1013 (800mA/125V)
FU117: REK1077 (1.6A/125V)
FU118: REK1082 (4A/125V)
CN407 B6P-VH-R
TO PSSB UNIT CN164 (➡SCH-2)
AC9V
FU118 4A/125V
FU117 1.6A/125V
800mA/125V FU116
D407 10DF2
D408 10DF2
D409 10DF2
D410 10DF2
D411 10DF2
D412 10DF2
D413 10DF2
D414 10DF2
C433 2200/35
C434 2200/35
R439 4.7K
R440 4.7K
C427 0.01
C428 0.01
C436 0.01
C437 0.01
C429 0.01
C430 0.01
C431 0.01
C432 0.01
GNDF
R499 47
R498 47
GND0
Q407, Q408 : DE-EMPHASIS
Q407 DTA124ES
Q408 DTC124ES
Q401-Q403 : MUTE
IC402 : AUDIO INTERFACE
IC402 PD0037
IC401 PD0037
IC407 : ATT-LEVEL CONTROLLER
IC407 PD0026A
IC406 PD0026A
IC406 : ATT-LEVEL CONTROLLER
Q411 DTC124ES
R445 10K
R410 220
"H"-EMP ON
"H"=Lch
Q409, Q410 : DE-EMPHASIS
Q404-Q406 : MUTE
1SS254 D402 D403 D404
1SS254 D405 D406
S1VB20/F03 D415
LM2940CT-5.0 IC404
C435 0.01
C438 2200/25
C439 0.01
C440 0.01
C441 100/10
1SS254 D416
R441 510
C443 33/35
D418 MTZJ5.9B
R443 2.2K
D417 MTZJ4.7B
R444 10K
C444 0.01
IC405 TC74HCU04AP
INVERTER
IC408 TC74HCU04AP
R431 220
R459 22
R432 220
R460 22
C442 100/10
C416 0.01
VCO (15.2~18.7MHz)
J1
J2
J3
J4
J5
J6
J7
J8
DKP3183 J415
DKP3183 J416
TO DACB UNIT (DACB1) CN604 (➡SCH-10)
TO DACB UNIT (DACB2) CN604 (➡SCH-10)
CN402 B5B-PH-K-R
CN401 B5B-PH-K-Y
DATA2
DATA1
ALAT
ADATA
ACLK
TO DAIF UNIT CN365 (➡SCH-3)
TO DAIF UNIT CN364 (➡SCH-3)
➡ : DIGITAL SIGNAL ROUTE
(UD)➡ : UNBALANCED DIGITAL SIGNAL ROUTE
(B)➡ : BALANCED DIGITAL SIGNAL ROUTE

IC402 (PD0037)

Pin No.	Voltage (V)
1	2.5
2-5	–
6, 7	2.5
8	–
9	1.5
10, 11	–
12	5.0
13, 14	–
15	0.7
16	2.0
17	5.0
18, 19	–
20-23	0.7
24	–
25	2.2
26	5.0
27	2.0
28	0.7
29	2.0
30	2.2
31	2.4
32	0
33, 34	2.5
35	–
36-38	0
39-42	–

- NOTE FOR FUSE REPLACEMENT

CAUTION – FOR CONTINUED PROTECTION AGAINST RISK OF FIRE, REPLACE ONLY WITH SAME TYPE AND RATINGS ONLY.

IC401 (PD0037)

Pin No.	Voltage (V)
1	2.5
2-8	–
9	1.5
10, 11	–
12	5.0
13-30	–
31	2.4
32	0
33	–
34	2.5
35-42	–

IC405 (TC74HCU04AP)

Pin No.	Voltage (V)
1-6	2.5
7, 8	–
9-13	2.5
14	–

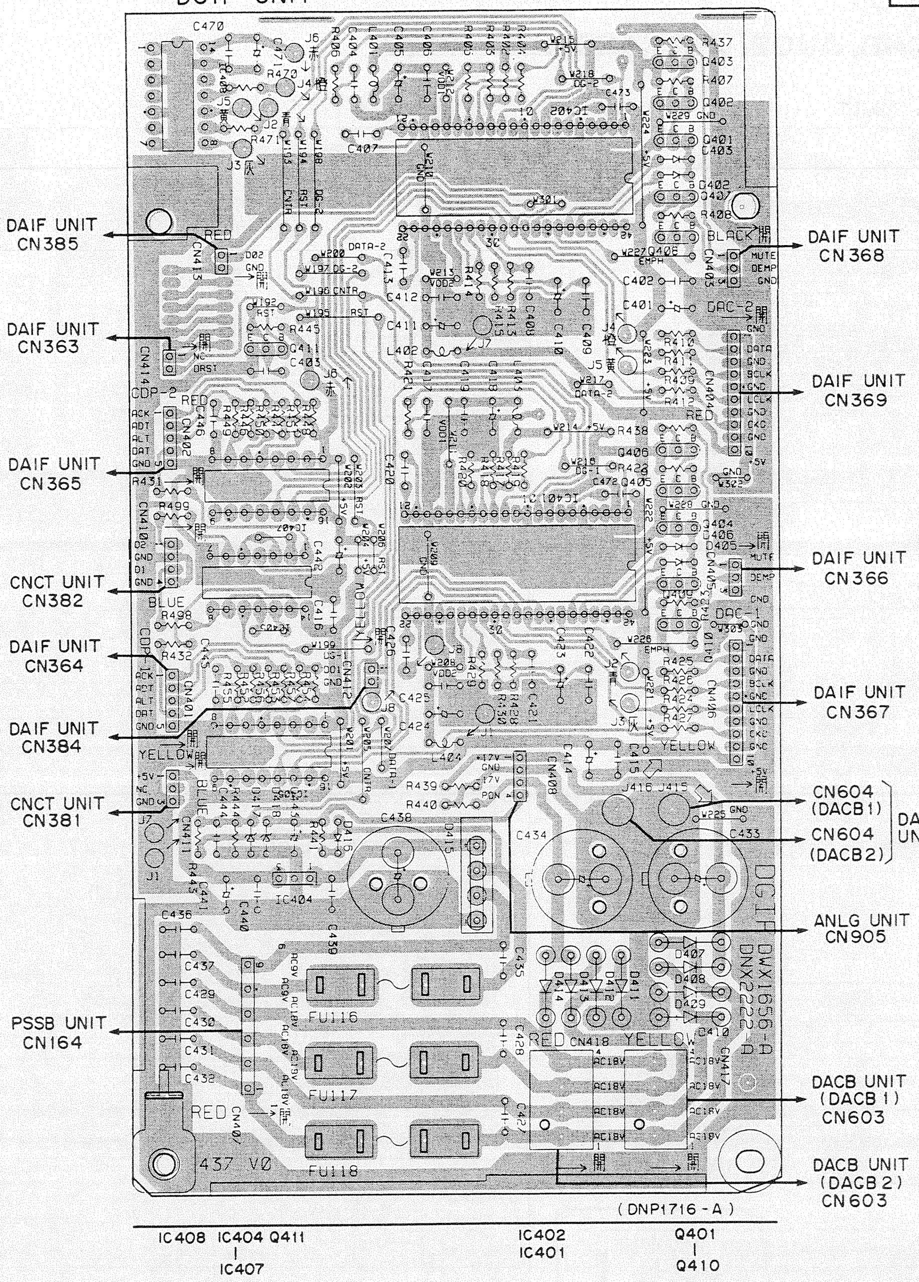
IC406 (PD0026A)

Pin No.	Voltage (V)
1, 2	–
3	5.0
4	0
5	5
6	0.1
7	5.0
8-12	–
13	2.5
14	0
15	2.4
16	–

IC407 (PD0026A)

Pin No.	Voltage (V)
1, 2	–
3	5.0
4-12	–
13	2.5
14	0
15	2.4
16	–

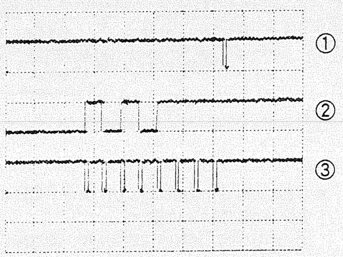
DGIF UNIT


DAIF UNIT CN385
DAIF UNIT CN363
DAIF UNIT CN365
CNCT UNIT CN382
DAIF UNIT CN364
DAIF UNIT CN384
CNCT UNIT CN381
PSSB UNIT CN164
DAIF UNIT CN368
DAIF UNIT CN369
DAIF UNIT CN366
DAIF UNIT CN367
CN604 (DACB1)
CN604 (DACB2)
DACB UNIT
ANLG UNIT CN905
DACB UNIT (DACB 1) CN603
DACB UNIT (DACB 2) CN603
(DNP1716 - A)
IC408
IC404 Q411
|
IC407
IC402
IC401
Q401
|
Q410
DWX1656-A
DNX2222-A
FU116
FU117
FU118

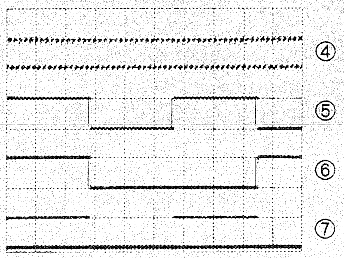
- This diagram is viewed from the mounted parts side.
- The parts mounted on this PCB include all necessary parts for several destinations.
  For further information for respective destinations, be sure to check with the schematic diagram.

WAVEFORMS OF DGIF UNIT

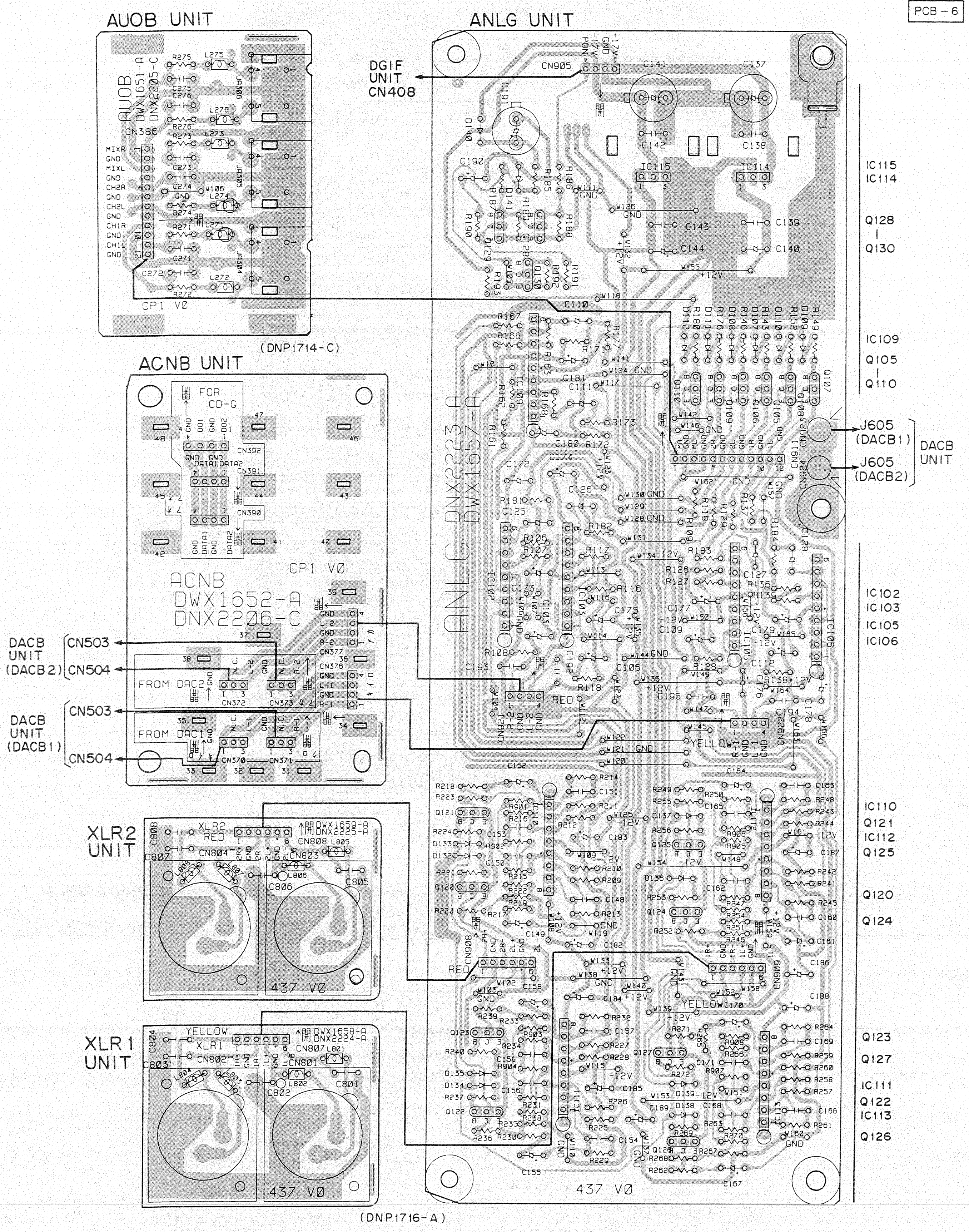
① IC406, IC407 – pin 7 (ALAT)
V : 5V/div. H : 20μS/div.
② IC406, IC407 – pin 6 (ADATA)
V : 5V/div. H : 20μS/div.
③ IC406, IC407 – pin 5 (ACLK)
V : 5V/div. H : 20μS/div.
• Fade-out mode



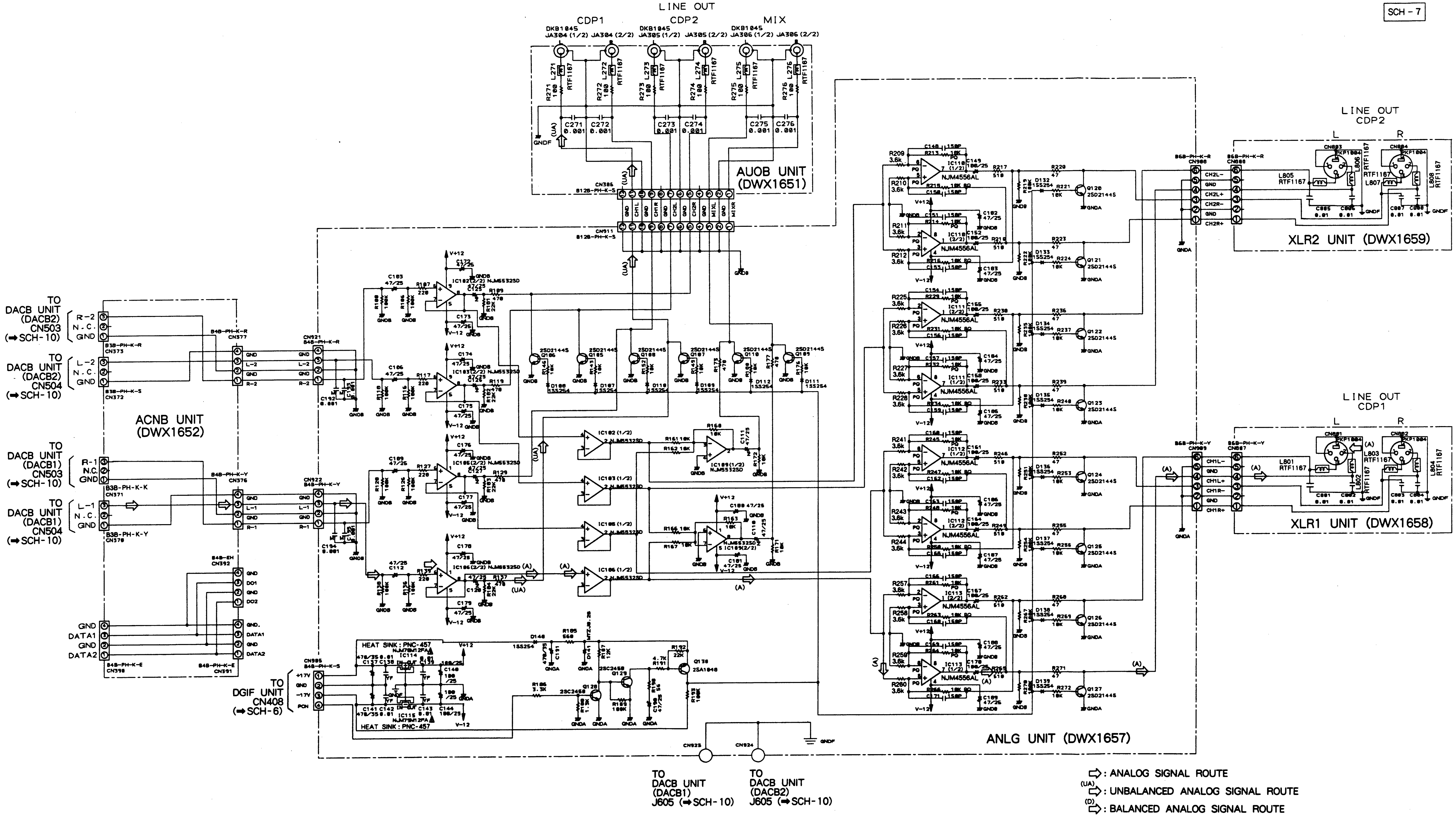
④ IC401, IC402 – pin 31 (BCK)
V : 5V/div. H : 2μS/div.
⑤ IC401, IC402 – pin 34 (WCK)
V : 5V/div. H : 2μS/div.
⑥ IC401, IC402 – pin 33 (LRCK)
V : 5V/div. H : 2μS/div.
⑦ IC401, IC402 – pin 32 (DATA)
V : 5V/div. H : 2μS/div.
• Play mode



4.7 ANLG, ACNB, AUOB, XLR1 AND XLR2 UNITS


PCB – 6
AUOB UNIT
AUOB
DWX1651-A
DNX2205-C
(DNP1714-C)
ANLG UNIT
ANLG
DNX2223-A
DWX1657-A
DGIF UNIT CN408
CN905
ACNB UNIT
ACNB
DWX1652-A
DNX2206-C
FOR CD-G
FROM DAC2
FROM DAC1
DACB UNIT (DACB2)
CN503
CN504
DACB UNIT (DACB1)
CN503
CN504
J605 (DACB1)
J605 (DACB2)
DACB UNIT
XLR2 UNIT
DWX1659-A
DNX2225-A
XLR1 UNIT
DWX1658-A
DNX2224-A
437 V0
(DNP1716-A)
IC115
IC114
Q128
|
Q130
IC109
Q105
|
Q110
IC102
IC103
IC105
IC106
IC110
Q121
IC112
Q125
Q120
Q124
Q123
Q127
IC111
Q122
IC113
Q126

- This diagram is viewed from the mounted parts side.
- The parts mounted on this PCB include all necessary parts for several destinations.
For further information for respective destinations, be sure to check with the schematic diagram.

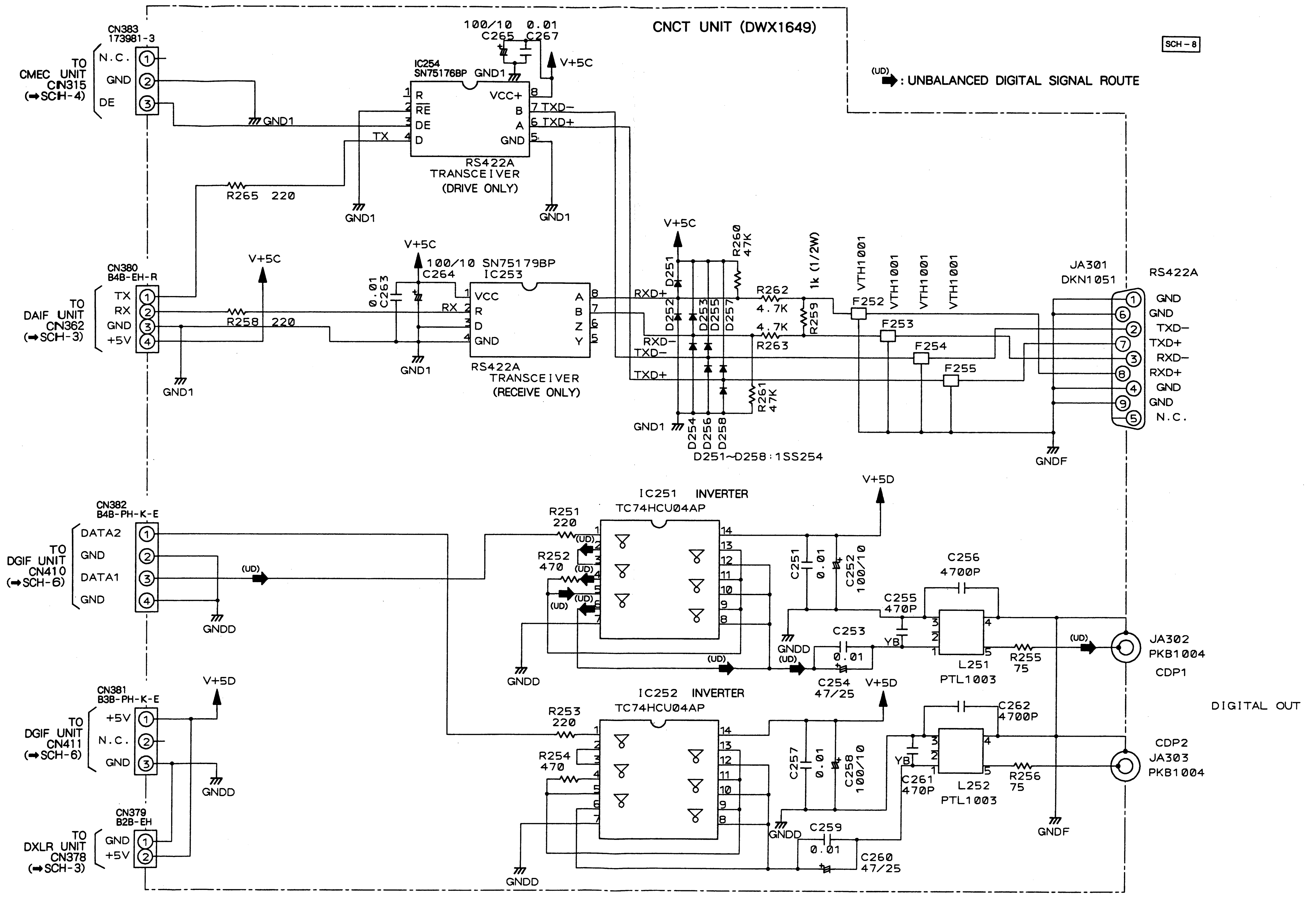

A
B
C
D
LINE OUT
CDP1
CDP2
MIX
DKB1045
JA304 (1/2)
JA304 (2/2)
JA305 (1/2)
JA305 (2/2)
JA306 (1/2)
JA306 (2/2)
RTF1167
C271 0.001
C272 0.001
C273 0.001
C274 0.001
C275 0.001
C276 0.001
GNDF
(UA)
AUOB UNIT
(DWX1651)
CN386
B12B-PH-K-S
CN911
B12B-PH-K-S
GND
CH1L
CH1R
CH2L
CH2R
MIXL
MIXR
TO DACB UNIT (DACB2) CN503 (➡SCH-10)
R-2
N.C.
GND
TO DACB UNIT (DACB2) CN504 (➡SCH-10)
L-2
B3B-PH-K-R
CN373
B3B-PH-K-S
CN372
ACNB UNIT
(DWX1652)
TO DACB UNIT (DACB1) CN503 (➡SCH-10)
R-1
TO DACB UNIT (DACB1) CN504 (➡SCH-10)
L-1
B3B-PH-K-K
CN371
B3B-PH-K-Y
CN370
B4B-PH-K-R
CN377
B4B-PH-K-Y
CN376
CN921
B4B-PH-K-R
CN922
B4B-PH-K-Y
B4B-EH
CN392
DO1
DO2
GND
DATA1
DATA2
B4B-PH-K-E
CN390
CN391
CN905
B4B-PH-K-S
TO DGIF UNIT CN408 (➡SCH-6)
+17V
-17V
PON
HEAT SINK : PNC-457
NJM78M12FA
NJM79M12FA
IC114
IC115
V+12
V-12
NJM5532SD
IC101 (2/2)
IC103 (2/2)
IC105 (2/2)
IC106 (2/2)
IC102 (1/2)
IC103 (1/2)
IC105 (1/2)
IC106 (1/2)
IC109 (1/2)
IC109 (2/2)
2SD2144S
Q106
Q105
Q108
Q107
Q110
Q109
1SS254
D108
D107
D110
D109
D112
D111
2SC2458
2SA1048
Q128
Q129
Q130
GNDB
GNDA
(A)
NJM4556AL
IC110 (1/2)
IC110 (2/2)
IC111 (1/2)
IC111 (2/2)
IC112 (1/2)
IC112 (2/2)
IC113 (1/2)
IC113 (2/2)
Q120
Q121
Q122
Q123
Q124
Q125
Q126
Q127
D132
D133
D134
D135
D136
D137
D138
D139
ANLG UNIT (DWX1657)
CN925
CN924
TO DACB UNIT (DACB1) J605 (➡SCH-10)
TO DACB UNIT (DACB2) J605 (➡SCH-10)
B6B-PH-K-R
CN908
CN808
CH2L-
CH2L+
CH2R-
CH2R+
LINE OUT
CDP2
L
R
CN803
CN804
PKP1004
L805
L806
L807
L808
C805 0.01
C806 0.01
C807 0.01
C808 0.01
XLR2 UNIT (DWX1659)
B6B-PH-K-Y
CN909
CN807
CH1L-
CH1L+
CH1R-
CH1R+
LINE OUT
CDP1
CN801
CN802
L801
L802
L803
L804
C801 0.01
C802 0.01
C803 0.01
C804 0.01
XLR1 UNIT (DWX1658)

⇨ : ANALOG SIGNAL ROUTE

(UA)⇨ : UNBALANCED ANALOG SIGNAL ROUTE

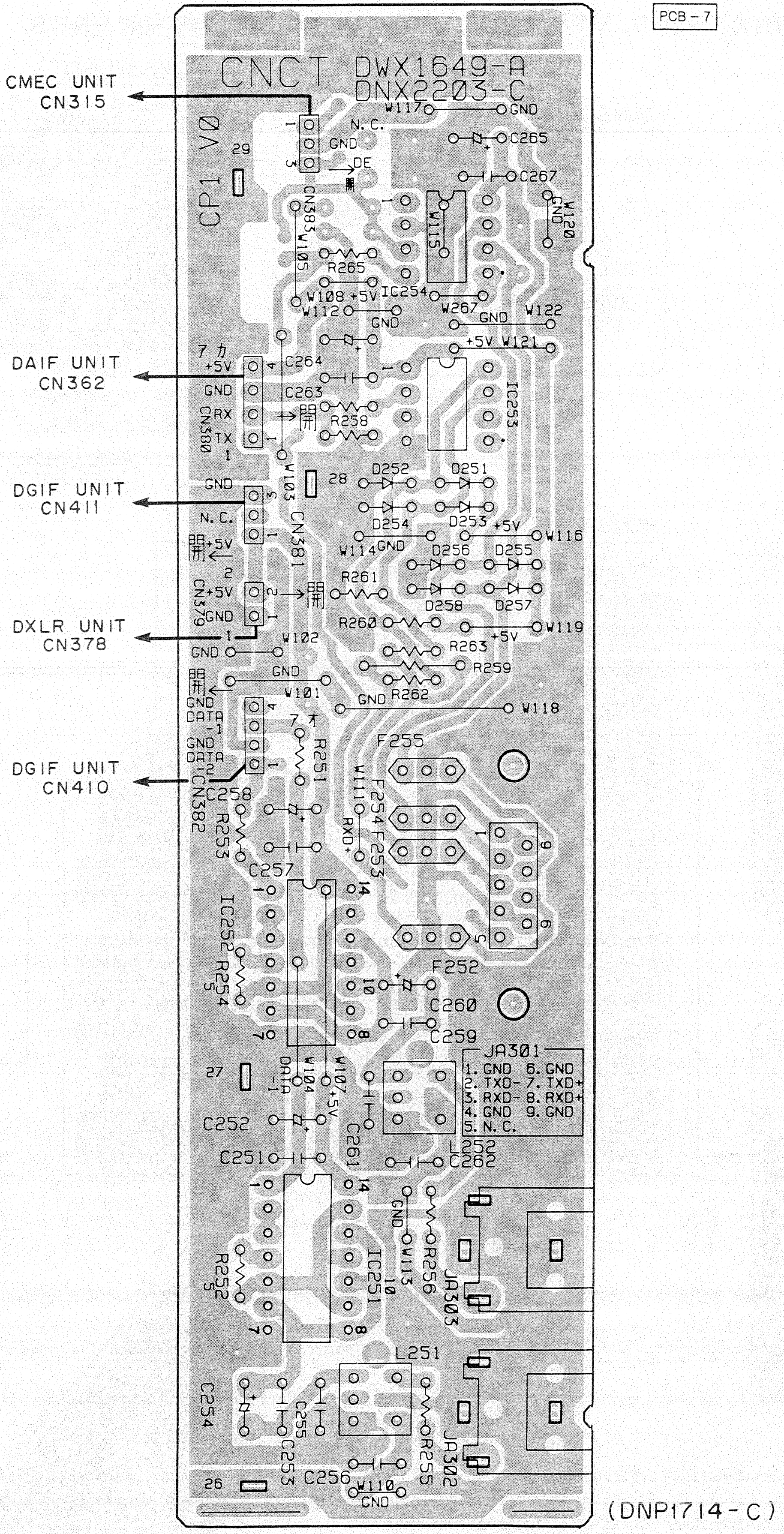
(D)⇨ : BALANCED ANALOG SIGNAL ROUTE

4.8 CNCT UNIT


CNCT UNIT (DWX1649)
SCH-8
(UD) : UNBALANCED DIGITAL SIGNAL ROUTE
CN383 173981-3
TO CMEC UNIT CN315 (➡SCH-4)
N.C.
GND
DE
100/10 0.01
C265 C267
V+5C
IC254 SN75176BP
GND1
R
RE
DE
D
VCC+
B
A
GND
TXD−
TXD+
TX
RS422A TRANSCEIVER (DRIVE ONLY)
R265 220
CN380 B4B-EH-R
TO DAIF UNIT CN362 (➡SCH-3)
TX
RX
GND
+5V
R258 220
0.01 C263
100/10 SN75179BP
C264 IC253
VCC
RX
GND
Z
Y
RS422A TRANSCEIVER (RECEIVE ONLY)
RXD+
RXD−
D251
D252
D253
D255
D257
D254
D256
D258
D251~D258 : 1SS254
R260 47K
R262 4.7K
R263 4.7K
R259 1k (1/2W)
R261 47K
VTH1001
F252
F253
F254
F255
JA301 DKN1051
RS422A
GND
TXD−
TXD+
RXD−
RXD+
N.C.
GNDF
CN382 B4B-PH-K-E
TO DGIF UNIT CN410 (➡SCH-6)
DATA2
DATA1
GNDD
IC251 INVERTER TC74HCU04AP
R251 220
R252 470
V+5D
C251 0.01
C252 100/10
C256 4700P
C255 470P
C253 0.01
C254 47/25
YB
L251 PTL1003
R255 75
JA302 PKB1004
CDP1
DIGITAL OUT
CN381 B3B-PH-K-E
TO DGIF UNIT CN411 (➡SCH-6)
IC252 INVERTER TC74HCU04AP
R253 220
R254 470
C257 0.01
C258 100/10
C262 4700P
C261 470P
L252 PTL1003
R256 75
CDP2
JA303 PKB1004
C259 0.01
C260 47/25
CN379 B2B-EH
TO DXLR UNIT CN378 (➡SCH-3)

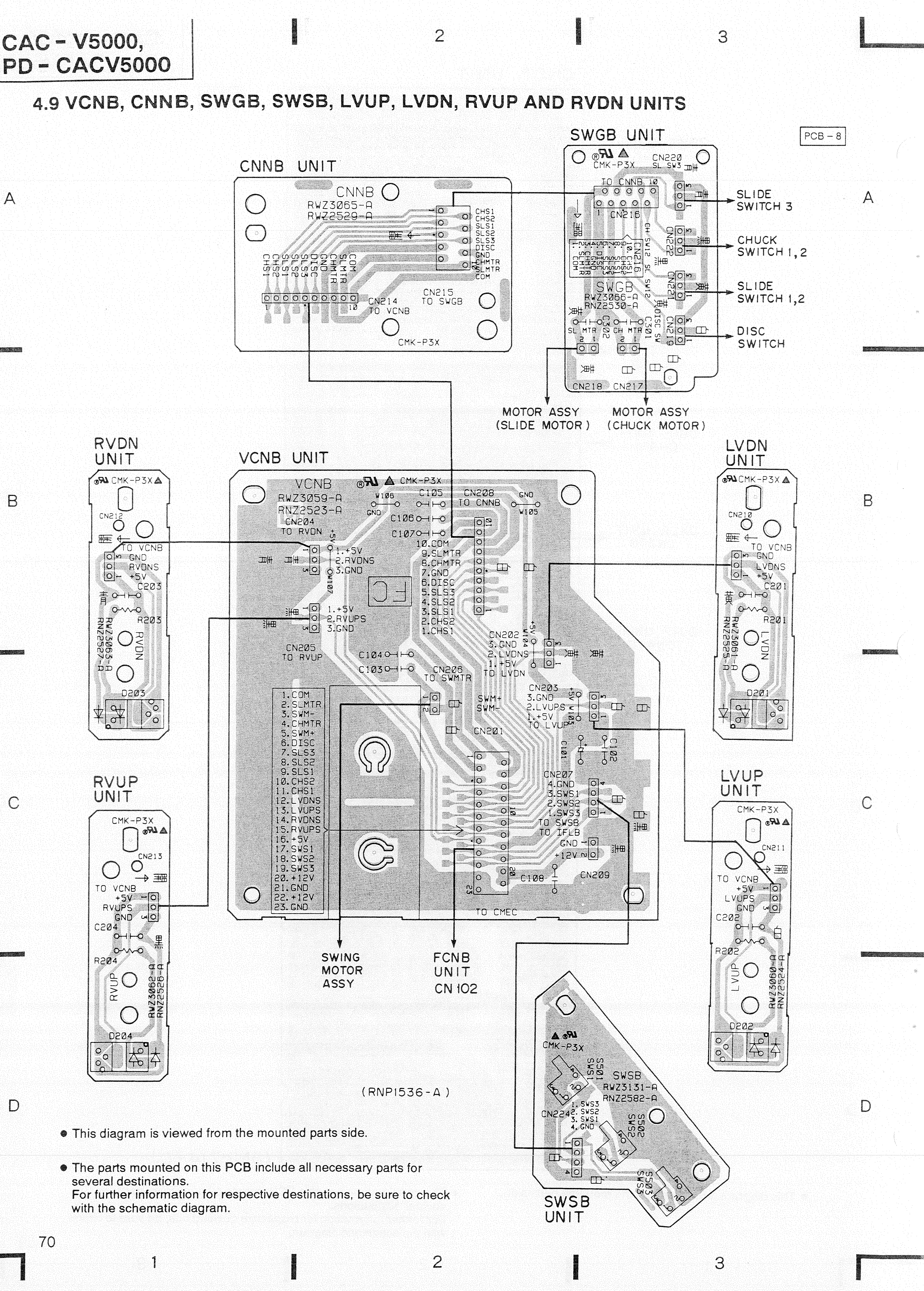
PCB - 7

CNCT UNIT

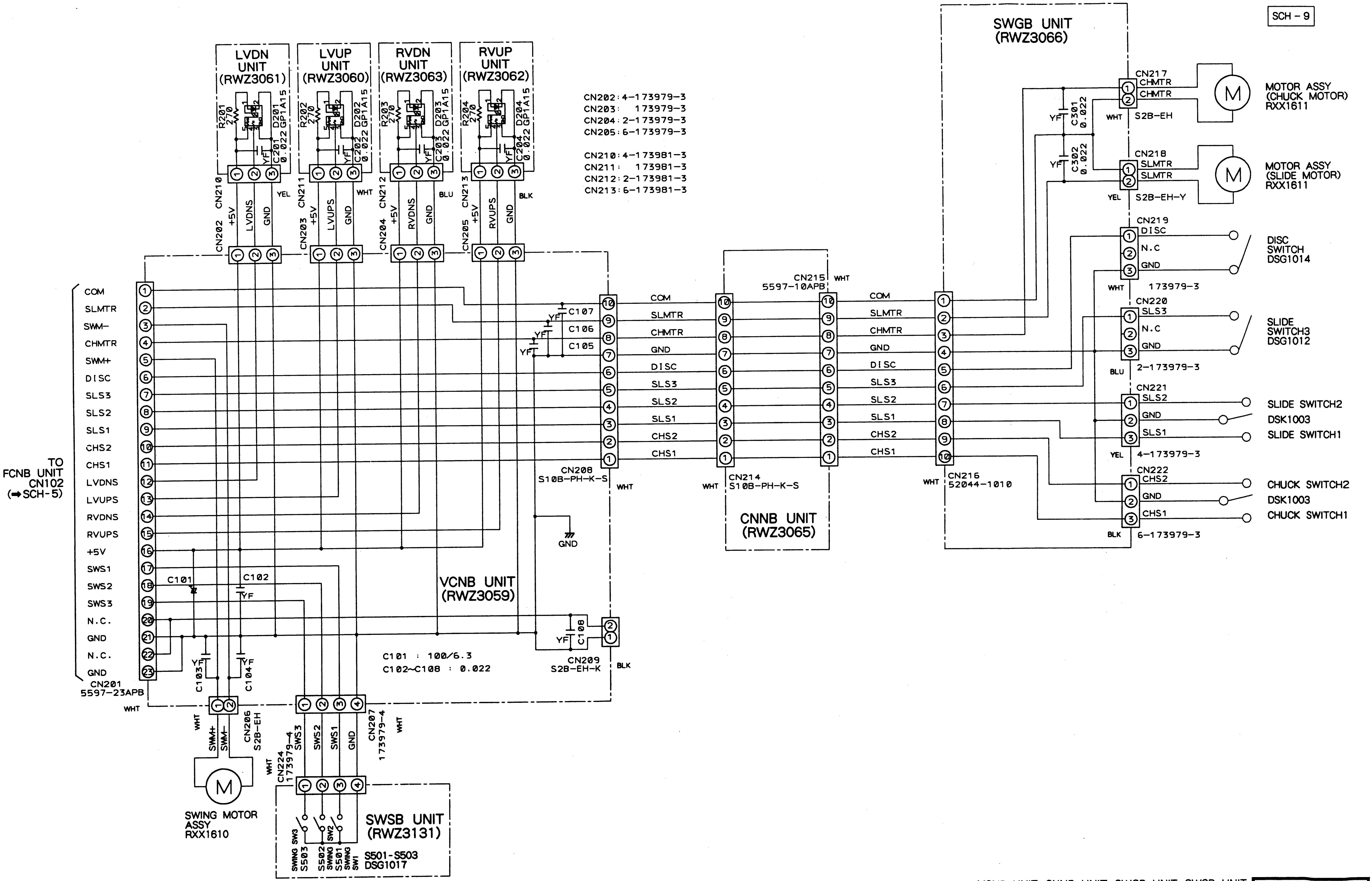

CMEC UNIT
CN315
DAIF UNIT
CN362
DGIF UNIT
CN411
DXLR UNIT
CN378
DGIF UNIT
CN410
CNCT DWX1649-A
DNX2203-C
CP1 V0
CN383
CN380
CN381
CN379
CN382
N. C.
GND
DE
+5V
RX
TX
DATA -1
DATA -2
RXD+
W101
W102
W103
W104
W105
W107
W108
W110
W111
W112
W113
W114
W115
W116
W117
W118
W119
W120
W121
W122
W267
IC251
IC252
IC253
IC254
R251
R252
R253
R254
R255
R256
R258
R259
R260
R261
R262
R263
R265
C251
C252
C253
C254
C255
C256
C257
C258
C259
C260
C261
C262
C263
C264
C265
C267
D251
D252
D253
D254
D255
D256
D257
D258
F252
F253
F254
F255
L251
L252
JA301
1. GND 6. GND
2. TXD- 7. TXD+
3. RXD- 8. RXD+
4. GND 9. GND
5. N. C.
JA302
JA303
26
27
28
29
(DNP1714-C)

- This diagram is viewed from the mounted parts side.
- The parts mounted on this PCB include all necessary parts for several destinations.
For further information for respective destinations, be sure to check with the schematic diagram.

4.9 VCNB, CNNB, SWGB, SWSB, LVUP, LVDN, RVUP AND RVDN UNITS


PCB - 8
2
3
A
B
C
D
1
SWGB UNIT
CMK-P3X
CN220 SL SW3
TO CNNB 10
CN216
SWGB
RWZ3066-A
RNZ2530-A
CN222
CN221
CN219
CN218
CN217
SL MTR
CH MTR
C302
C301
DISC SW
SLIDE SWITCH 3
CHUCK SWITCH 1, 2
SLIDE SWITCH 1, 2
DISC SWITCH
MOTOR ASSY (SLIDE MOTOR)
MOTOR ASSY (CHUCK MOTOR)
CNNB UNIT
CNNB
RWZ3065-A
RWZ2529-A
CHS1
CHS2
SLS1
SLS2
SLS3
DISC
GND
CHMTR
SLMTR
COM
CN214 TO VCNB
CN215 TO SWGB
CMK-P3X
RVDN UNIT
CMK-P3X
CN212
TO VCNB
GND
RVDNS
+5V
C203
R203
RVDN
RWZ3063-A
RNZ2527-A
D203
VCNB UNIT
VCNB
RWZ3059-A
RNZ2523-A
CMK-P3X
W106
GND
C105
CN208 TO CNNB
GND
W105
C106
C107
CN204 TO RVDN
1. +5V
2. RVDNS
3. GND
W107
10. COM
9. SLMTR
8. CHMTR
7. GND
6. DISC
5. SLS3
4. SLS2
3. SLS1
2. CHS2
1. CHS1
1. +5V
2. RVUPS
3. GND
CN205 TO RVUP
C104
C103
CN206 TO SWMTR
CN202
3. GND
2. LVDNS
1. +5V
TO LVDN
W104
1. COM
2. SLMTR
3. SWM-
4. CHMTR
5. SWM+
6. DISC
7. SLS3
8. SLS2
9. SLS1
10. CHS2
11. CHS1
12. LVDNS
13. LVUPS
14. RVDNS
15. RVUPS
16. +5V
17. SWS1
18. SWS2
19. SWS3
20. +12V
21. GND
22. +12V
23. GND
SWM+
SWM-
CN201
CN203
3. GND
2. LVUPS
1. +5V
TO LVUP
W103
C101
C102
CN207
4. GND
3. SWS1
2. SWS2
1. SWS3
TO SWSB
TO IFLB
GND
+12V
CN209
C108
TO CMEC
SWING MOTOR ASSY
FCNB UNIT CN 102
LVDN UNIT
CMK-P3X
CN210
TO VCNB
GND
LVDNS
+5V
C201
R201
LVDN
RWZ3061-A
RNZ2525-A
D201
RVUP UNIT
CMK-P3X
CN213
TO VCNB
+5V
RVUPS
GND
C204
R204
RVUP
RWZ3062-A
RNZ2526-A
D204
LVUP UNIT
CMK-P3X
CN211
TO VCNB
+5V
LVUPS
GND
C202
R202
LVUP
RWZ3060-A
RNZ2524-A
D202
(RNP1536-A)
CMK-P3X
S501 SWS1
SWSB
RWZ3131-A
RNZ2582-A
CN224
1. SWS3
2. SWS2
3. SWS1
4. GND
S502 SWS2
S503 SWS3
SWSB UNIT

- This diagram is viewed from the mounted parts side.
- The parts mounted on this PCB include all necessary parts for several destinations.
For further information for respective destinations, be sure to check with the schematic diagram.


SWGB UNIT (RWZ3066)
LVDN UNIT (RWZ3061)
LVUP UNIT (RWZ3060)
RVDN UNIT (RWZ3063)
RVUP UNIT (RWZ3062)
R201 270
D201 GP1A15
C201 0.022
R202 270
D202 GP1A15
C202 0.022
R203 270
D203 GP1A15
C203 0.022
R204 270
D204 GP1A15
C204 0.022
YF
YEL
WHT
BLU
BLK
CN202 CN210
CN203 CN211
CN204 CN212
CN205 CN213
+5V
LVDNS
LVUPS
RVDNS
RVUPS
GND
CN202:4-173979-3
CN203: 173979-3
CN204:2-173979-3
CN205:6-173979-3
CN210:4-173981-3
CN211: 173981-3
CN212:2-173981-3
CN213:6-173981-3
TO FCNB UNIT CN102 (➡SCH-5)
COM
SLMTR
SWM−
CHMTR
SWM+
DISC
SLS3
SLS2
SLS1
CHS2
CHS1
LVDNS
LVUPS
RVDNS
RVUPS
+5V
SWS1
SWS2
SWS3
N.C.
GND
N.C.
GND
CN201 5597-23APB
C101
C102
C103
C104
C105
C106
C107
C108
VCNB UNIT (RWZ3059)
C101 : 100/6.3
C102~C108 : 0.022
CN208 S10B-PH-K-S
CN209 S2B-EH-K
GND
CN214 S10B-PH-K-S
CN215 5597-10APB
CNNB UNIT (RWZ3065)
CN216 52044-1010
CN217 CHMTR CHMTR
S2B-EH
C301 0.022
C302 0.022
MOTOR ASSY (CHUCK MOTOR) RXX1611
CN218 SLMTR SLMTR
S2B-EH-Y
MOTOR ASSY (SLIDE MOTOR) RXX1611
M
CN219 DISC N.C GND
173979-3
DISC SWITCH DSG1014
CN220 SLS3 N.C GND
2-173979-3
SLIDE SWITCH3 DSG1012
CN221 SLS2 GND SLS1
4-173979-3
SLIDE SWITCH2
DSK1003
SLIDE SWITCH1
CN222 CHS2 GND CHS1
6-173979-3
CHUCK SWITCH2
DSK1003
CHUCK SWITCH1
CN206 S2B-EH
SWM+ SWM−
SWING MOTOR ASSY RXX1610
CN207 173979-4
SWS3 SWS2 SWS1 GND
CN224 173979-4
SWSB UNIT (RWZ3131)
SWING SW3 S503
SWING SW2 S502
SWING SW1 S501
S501-S503 DSG1017

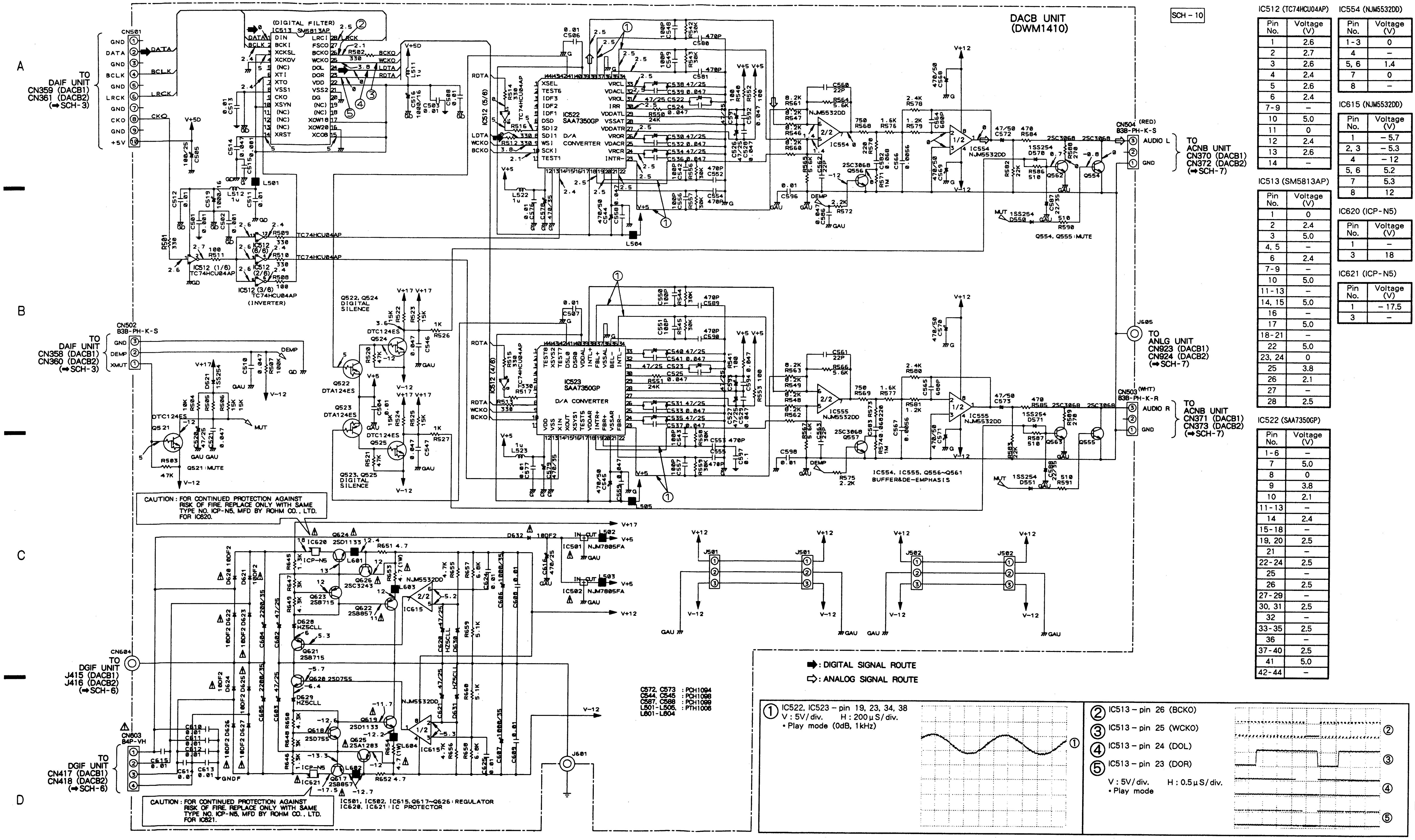
SCH-9

VCNB UNIT, CNNB UNIT, SWGB UNIT, SWSB UNIT,
LVUP UNIT, LVDN UNIT,
RVUP UNIT, RVDN UNIT

VCNB UNIT, CNNB UNIT, SWGB UNIT, SWSB UNIT,
LVUP UNIT, LVDN UNIT,
RVUP UNIT, RVDN UNIT

SCH-9

4.10 DACB UNIT


DACB UNIT
(DWM1410)
SCH - 10
CN501
GND ①
DATA ②
GND ③
BCLK ④
GND ⑤
LRCK ⑥
GND ⑦
CKO ⑧
GND ⑨
+5V ⑩
TO
DAIF UNIT
CN359 (DACB1)
CN361 (DACB2)
(➡SCH-3)
(DIGITAL FILTER)
IC513 SM5813AP
IC522
SAA7350GP
D/A
CONVERTER
IC523
SAA7350GP
D/A CONVERTER
IC512 (1/6) TC74HCU04AP
IC512 (3/6) TC74HCU04AP
(INVERTER)
CN502
B3B-PH-K-S
GND ③
DEMP ②
XMUT ①
TO
DAIF UNIT
CN358 (DACB1)
CN360 (DACB2)
(➡SCH-3)
Q521 : MUTE
Q522, Q524
DIGITAL
SILENCE
Q523, Q525
DIGITAL
SILENCE
IC554
NJM5532DD
IC555
NJM5532DD
IC554, IC555, Q556~Q561
BUFFER&DE-EMPHASIS
Q554, Q555 : MUTE
CN504 (RED)
B3B-PH-K-S
AUDIO L
GND
TO
ACNB UNIT
CN370 (DACB1)
CN372 (DACB2)
(➡SCH-7)
J605
TO
ANLG UNIT
CN923 (DACB1)
CN924 (DACB2)
(➡SCH-7)
CN503 (WHT)
B3B-PH-K-R
AUDIO R
GND
TO
ACNB UNIT
CN371 (DACB1)
CN373 (DACB2)
(➡SCH-7)
IC620 ICP-N5
IC621 ICP-N5
IC615 NJM5532DD
IC501 NJM7805FA
IC502 NJM7805FA
V+17
V+5
V+12
V-12
CN604
TO
DGIF UNIT
J415 (DACB1)
J416 (DACB2)
(➡SCH-6)
CN603
B4P-VH
TO
DGIF UNIT
CN417 (DACB1)
CN418 (DACB2)
(➡SCH-6)
J601
J501
J502
GAU
GNDF
1
2
3
4
5
6
A
B
C
D

CAUTION : FOR CONTINUED PROTECTION AGAINST RISK OF FIRE. REPLACE ONLY WITH SAME TYPE NO. ICP-N5, MFD BY ROHM CO., LTD. FOR IC620.

CAUTION : FOR CONTINUED PROTECTION AGAINST RISK OF FIRE. REPLACE ONLY WITH SAME TYPE NO. ICP-N5, MFD BY ROHM CO., LTD. FOR IC621.

IC501, IC502, IC615, Q617~Q626 : REGULATOR
IC620, IC621 : IC PROTECTOR

C572, C573 : PCH1094
C544, C545 : PCH1098
C587, C588 : PCH1099
L501-L505, : PTH1006
L601-L604

➡ : DIGITAL SIGNAL ROUTE
⇨ : ANALOG SIGNAL ROUTE

① IC522, IC523 – pin 19, 23, 34, 38
V : 5V/div. H : 200μS/div.
• Play mode (0dB, 1kHz)

② IC513 – pin 26 (BCKO)
③ IC513 – pin 25 (WCKO)
④ IC513 – pin 24 (DOL)
⑤ IC513 – pin 23 (DOR)
V : 5V/div. H : 0.5μS/div.
• Play mode

IC512 (TC74HCU04AP)

Pin No.	Voltage (V)
1	2.6
2	2.7
3	2.6
4	2.4
5	2.6
6	2.4
7-9	–
10	5.0
11	0
12	2.4
13	2.6
14	–

IC513 (SM5813AP)

Pin No.	Voltage (V)
1	0
2	2.4
3	5.0
4, 5	–
6	2.4
7-9	–
10	5.0
11-13	–
14, 15	5.0
16	–
17	5.0
18-21	–
22	5.0
23, 24	0
25	3.8
26	2.1
27	–
28	2.5

IC522 (SAA7350GP)

Pin No.	Voltage (V)
1-6	–
7	5.0
8	0
9	3.8
10	2.1
11-13	–
14	2.4
15-18	–
19, 20	2.5
21	–
22-24	2.5
25	–
26	2.5
27-29	–
30, 31	2.5
32	–
33-35	2.5
36	–
37-40	2.5
41	5.0
42-44	–

IC554 (NJM5532DD)

Pin No.	Voltage (V)
1-3	0
4	–
5, 6	1.4
7	0
8	–

IC615 (NJM5532DD)

Pin No.	Voltage (V)
1	– 5.7
2, 3	– 5.3
4	– 12
5, 6	5.2
7	5.3
8	12

IC620 (ICP-N5)

Pin No.	Voltage (V)
1	–
3	18

IC621 (ICP-N5)

Pin No.	Voltage (V)
1	– 17.5
3	–

DACB UNIT

ACNB UNIT
CN370
(DACB1)
CN372
(DACB2)

ANLG UNIT
CN923 (DACB1)
CN924 (DACB2)

ACNB UNIT
CN371(DACB1)
CN373(DACB2)

Q554
Q555

Q562
Q563

Q556
Q557

IC554
IC555

IC522
IC523

IC501
IC502

IC512
IC513

Q525
Q523

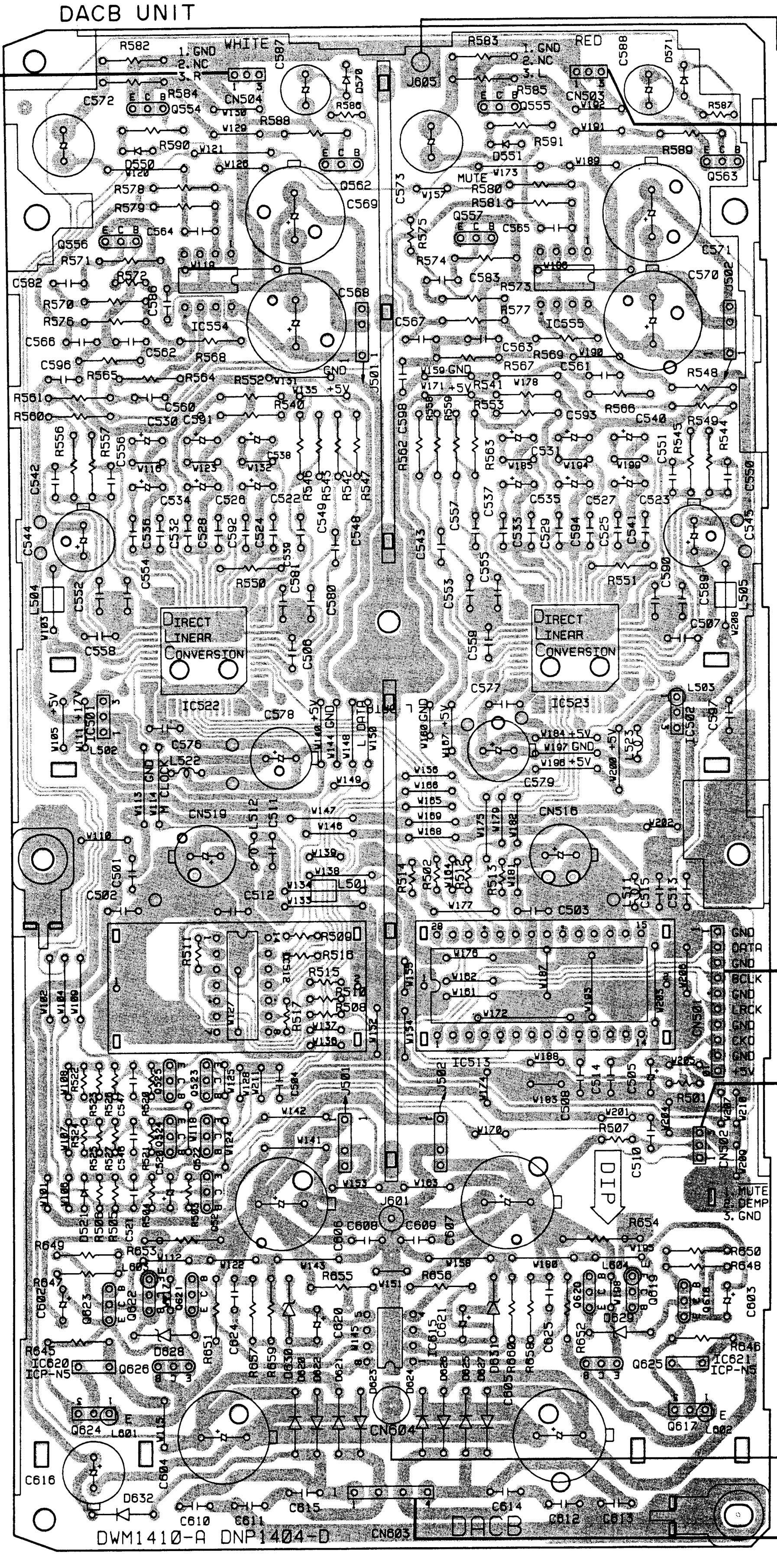
Q524
Q522

Q521

Q618
|
Q623
IC615

IC620 IC621
Q626 Q625

Q624 Q617


1
2
3
A
B
C
D
1. GND
2. NC
3. R
WHITE
1. GND
2. NC
3. L
RED
J605
CN504
CN503
MUTE
GND
+5V
DIRECT
LINEAR
CONVERSION
IC522
IC523
IC554
IC555
IC501
IC502
L DATA
CLOCK
CN519
CN518
CN501
GND
DATA
GND
BCLK
GND
LRCK
GND
CKO
GND
+5V
IC513
J501
J502
J601
DIP
1. MUTE
2. DEMP
3. GND
IC620
ICP-N5
IC621
ICP-N5
CN604
CN603
DACB
DWM1410-A DNP1404-D
C616
D632
C610
C611
C615
C614
C612
C613

DAIF UNIT
CN359(DACB1)
CN361(DACB2)

DAIF UNIT
CN358(DACB1)
CN360(DACB2)

DGIF UNIT
J415(DACB1)
J416(DACB2)

DGIF UNIT
CN417(DACB1)
CN418(DACB2)

- This diagram is viewed from the mounted parts side.

- The parts mounted on this PCB include all necessary parts for several destinations.
For further information for respective destinations, be sure to check with the schematic diagram.

4.11 CDP, MECB UNITS AND PICKUP ASSY- S

VOLTAGE OF CDP UNIT

IC301 (CXA1372Q)

Pin No.	Voltage (V)	Pin No.	Voltage (V)
1	0	25	5
2	10m	26	50m
3	0	27	5
4	0	28	0
5	350m	29	3m
6	− 1.6m	30	5
7	300m	31	2.5
8	− 5 to 0m	32	2.6
9	0.7m	33	5
10	5	34	− 1.5
11	− 100 to 100m	35	− 1.7
12	− 1.8m	36	5
13	0 to 30m	37	− 700m
14	0 to 350m	38	− 2.2
15	0 to 30m	39	− 6.7m
16	− 4	40	900m
17	1.3	41	− 5
18	0	42	0
19	− 5	43	− 10 to 10m
20	5	44	− 15 to 0m
21	5	45	0
22	5	46	23m
23	5	47	23m
24	5	48	12m

IC302 (CXD2500BQ)

Pin No.	Voltage (V)	Pin No.	Voltage (V)	Pin No.	Voltage (V)	Pin No.	Voltage (V)
1	5	21	0	41	1.3	61	2.7m
2	1	22	2.5	42	5	62	2.4m
3	5	23	5	43	2.4	63	4.6m
4	2.5	24	2.6	44	2.4	64	5.4m
5	1.4	25	300m	45	5	65	0
6	5	26	0	46	4.4	66	4.5
7	NC	27	2.5	47	2.2m	67	—
8	5	28	0	48	2.2m	68	1.5m
9	0	29	1	49	2.2m	69	4.5
10	0	30	0	50	1.2	70	5
11	0	31	2.5	51	1.2	71	5
12	0	32	2.5	52	0	72	5
13	NC	33	5	53	—	73	5
14	NC	34	1.2	54	—	74	—
15	NC	35	2	55	0	75	5
16	5	36	1.2	56	2.5	76	51m
17	0	37	2	57	1.3	77	5
18	2.5	38	2.5	58	2	78	5
19	2.6	39	2.7m	59	5	79	5
20	—	40	5	60	2.1m	80	2m

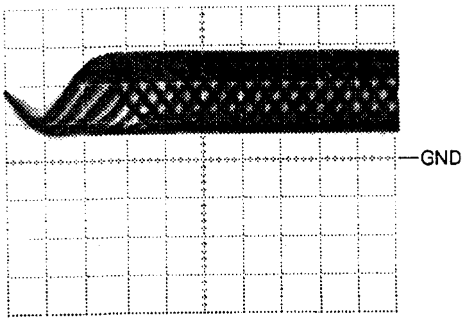
IC303 (DYW1347)

Pin No.	Voltage (V)	Pin No.	Voltage (V)	Pin No.	Voltage (V)
1	5	23	5	45	5
2	5	24	5	46	5
3	5	25	5	47	5
4	4.6m	26	4.5	48	5
5	1.6m	27	0	49	5
6	5	28	5	50	5
7	5	29	2.1	51	5
8	5	30	1.9	52	5
9	5	31	4.8	53	5
10	—	32	0	54	5
11	5	33	5	55	5
12	5	34	5	56	5
13	4.5	35	5	57	4.0m
14	0.6m	36	0.5m	58	4.1m
15	5	37	0.5m	59	4.1m
16	5	38	0.5m	60	4.1m
17	5	39	0.5m	61	4.1m
18	5	40	0.5m	62	5
19	5	41	0.5m	63	4.1m
20	5	42	5	64	5
21	5	43	5		
22	4.5	44	5		

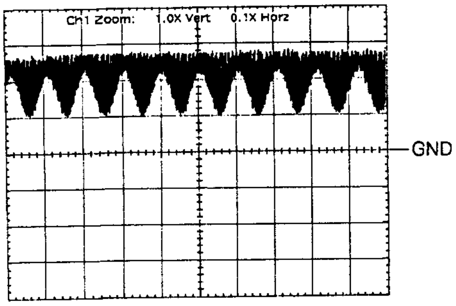
WAVEFORMS OF CDP UNIT

• DC range without notice

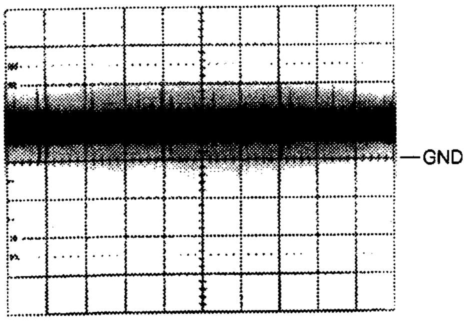
① TP1 – pin 1 (RF) • at PLAY
V : 500mV/div. H : 500nS/div.



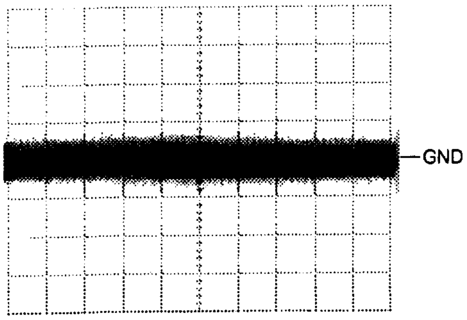
② TP1 – pin 1 (RF) • at SEARCH
V : 500mV/div. H : 200 µS/div.



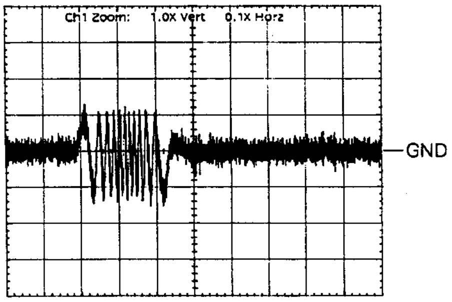
③ TP1 – pin 6 (FO ER) • at PLAY
V : 100mV/div. H : 10mS/div.



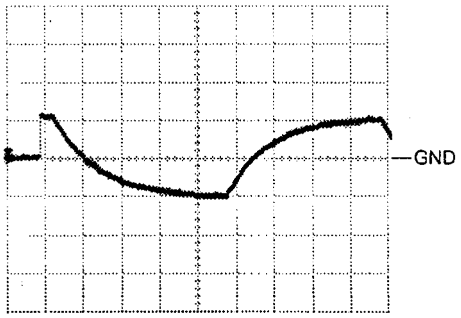
④ TP1 – pin 2 (TR ER) • at PLAY
V : 1V/div. H : 10mS/div.



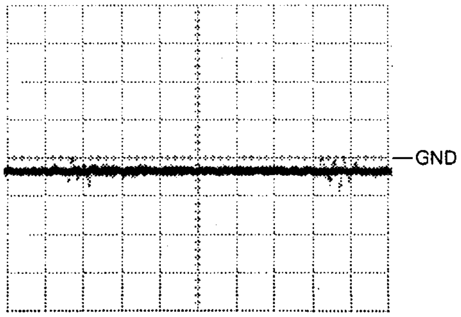
⑤ TP1 – pin 5 (TR ER) • at 10Tr Jump
V : 1V/div. H : 1mS/div.



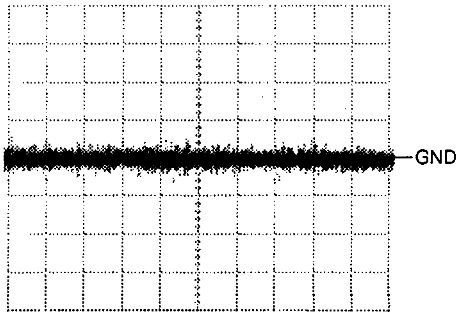
⑥ IC304 – pin 9 (FO DRV) • No disc
V : 1V/div. H : 200mS/div.



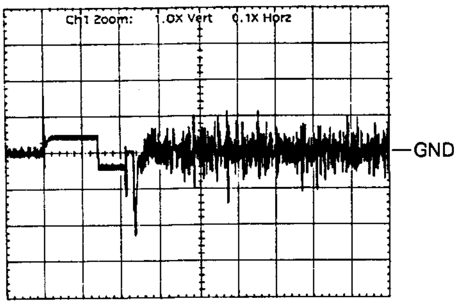
⑦ IC304 – pin 9 (FO DRV) • at PLAY
V : 1V/div. H : 1mS/div.



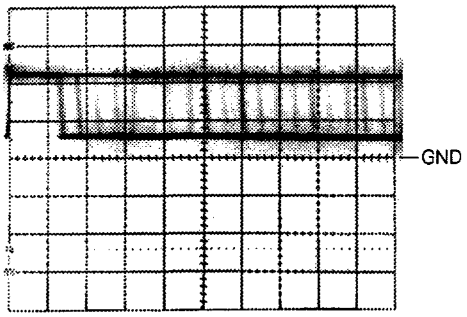
⑧ IC304 – pin 4 (TR DRV) • at PLAY
V : 500mV/div. H : 1mS/div.



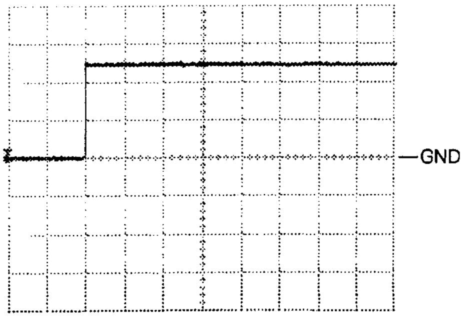
⑨ IC304 – pin 4 (TR DRV) • at 10Tr Jump
V : 1V/div. H : 1mS/div.



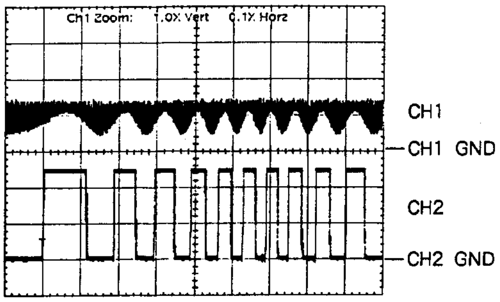
⑩ IC301 – pin 32 (EFM) • at PLAY
V : 2V/div. H : 500nS/div.



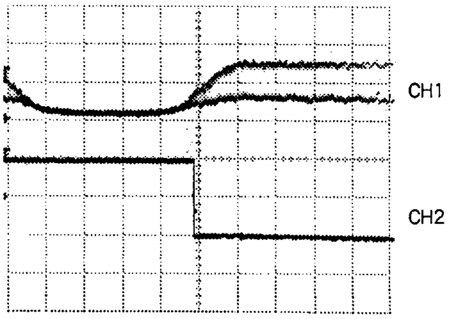
⑪ CN306 – pin 4 (XRST) • at POWER ON
V : 2V/div. H : 100mS/div.



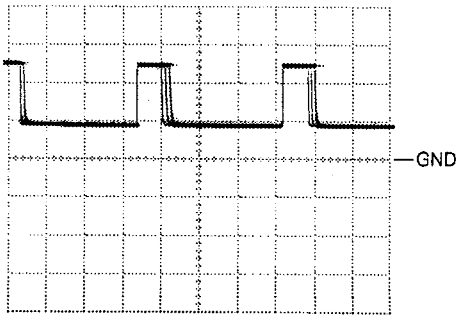
⑫ CH1 : TP1 – pin 1 (RF) • at 10Tr Jump
V : 1V/div. H : 200 μS/div.
CH2 : IC301 – pin 29 (MIRR) • at 10Tr Jump
V : 2V/div. H : 200 μS/div.



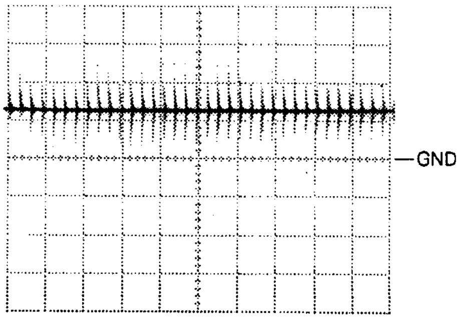
⑬ CH1 : TP1 – pin 1 (RF) • at PLAY
V : 1V/div. H : 200 μS/div.
CH2 : IC301 – pin 30 (DFCT) • at PLAY
V : 5V/div. H : 200 μS/div.



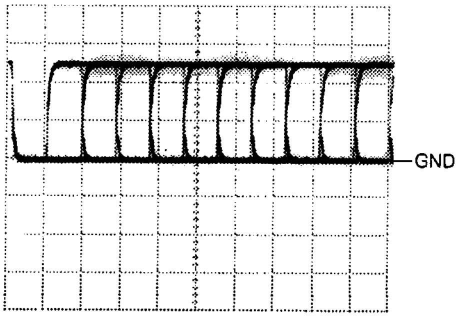
⑭ IC302 – pin 4 (MDP) • at PLAY
V : 2V/div. H : 500nS/div.



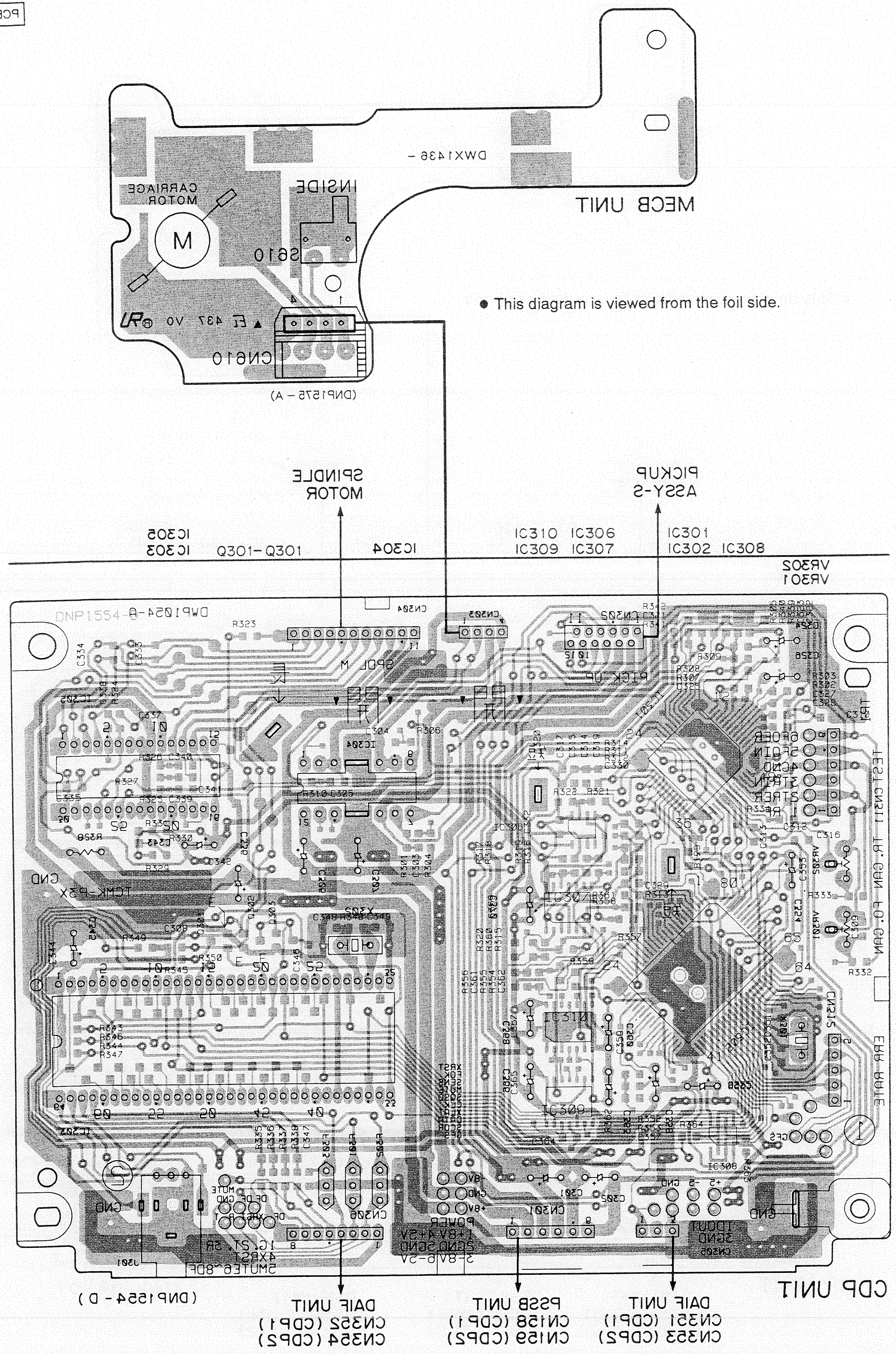
⑮ IC302 – pin 20 (PCO) • at PLAY
V : 2V/div. H : 10 μS/div.



⑯ CN305 – pin 1 (D OUT) • at PLAY
V : 2V/div. H : 200nS/div.

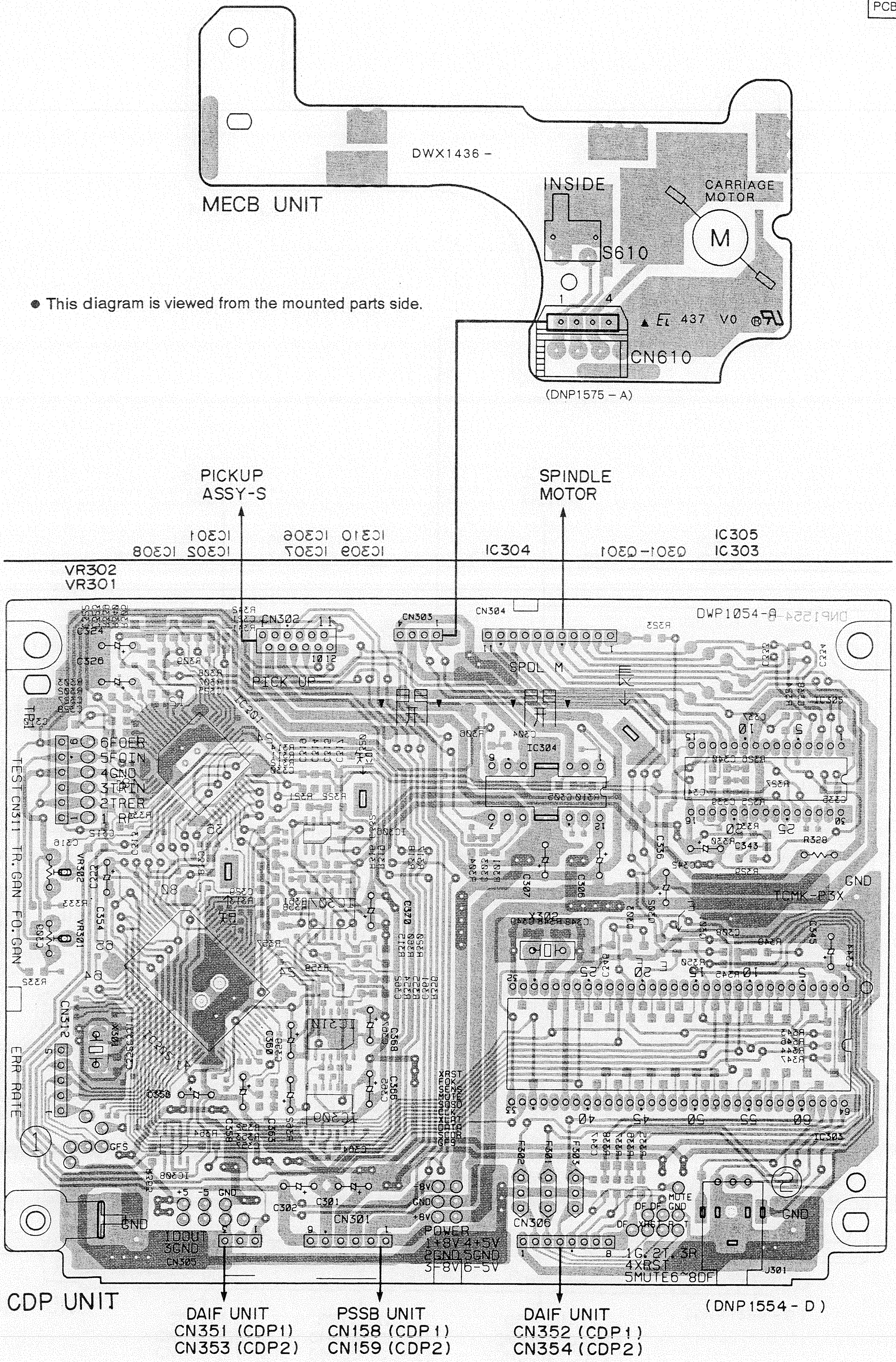


PCB - 10


MECB UNIT
DWX1436 -
INSIDE
CARRIAGE MOTOR
M
S610
CN610
(DNP1575 - A)
SPINDLE MOTOR
PICKUP ASSY-S
IC305
IC303
Q301-Q301
IC304
IC310 IC306
IC309 IC307
IC301
IC302 IC308
VR302
VR301
DWP1054-B
CN304
CN303
CN302
SPDL M
PICK UP
CN311 TEST
CN313 ERR RATE
GND
CN301
CN306
CN305
CDP UNIT
(DNP1554 - D)
DAIF UNIT
CN352 (CDP1)
CN354 (CDP2)
PSSB UNIT
CN158 (CDP1)
CN159 (CDP2)
DAIF UNIT
CN351 (CDP1)
CN353 (CDP2)

- This diagram is viewed from the foil side.

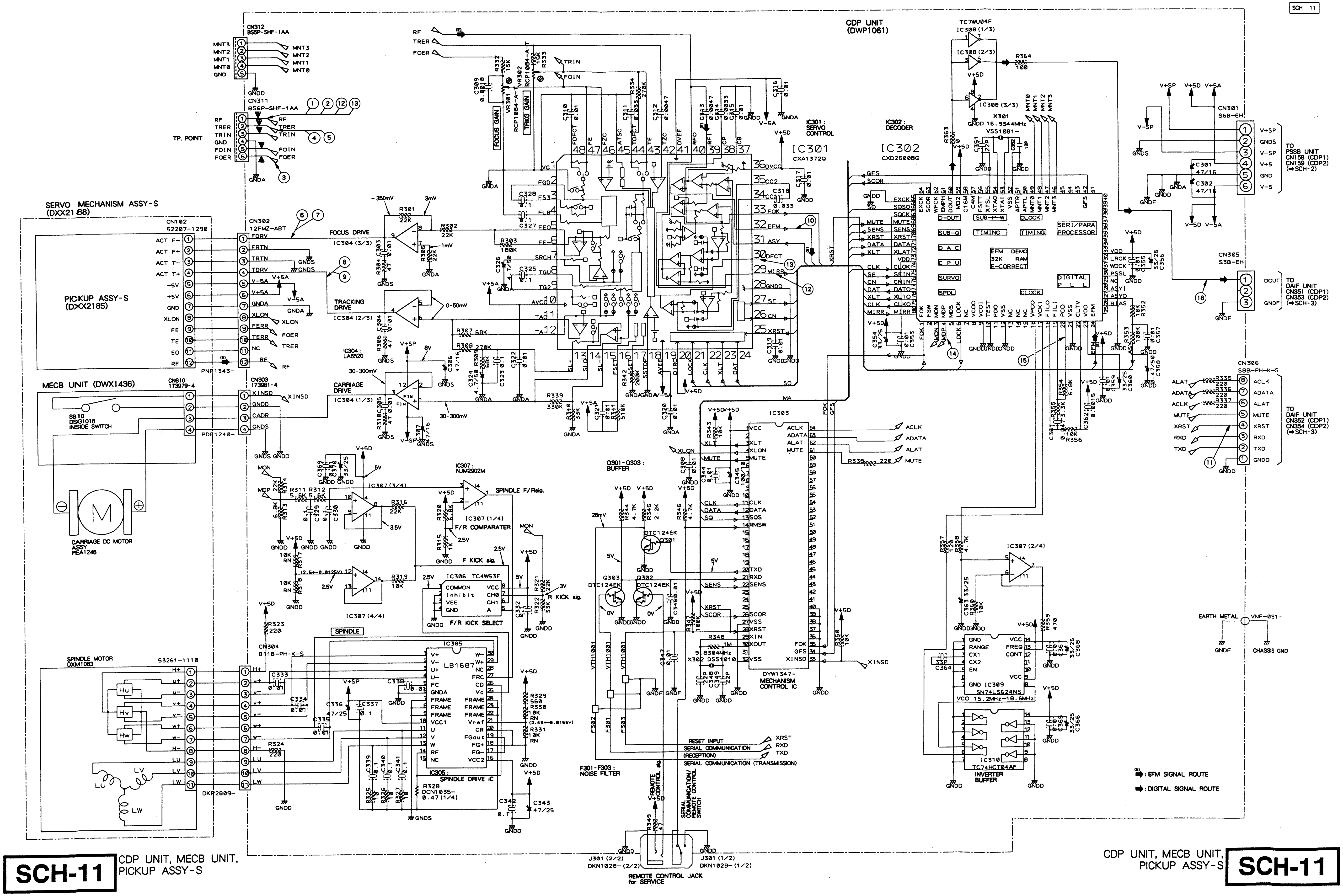
- This diagram is viewed from the gray colored foil side.
- This PCB is double sided.


MECB UNIT
DWX1436 -
INSIDE
CARRIAGE MOTOR
M
S610
1
4
CN610
Ei 437 V0
(DNP1575 - A)
PICKUP ASSY-S
SPINDLE MOTOR
IC301
IC302 IC308
IC310 IC306
IC309 IC307
IC304
Q301-Q301
IC305
IC303
VR302
VR301
CN302
PICK UP
CN303
CN304
SPDL M
DWP1054-A
TEST CN311 TR.GAN FO.GAN
6FOER
5FOIN
4GND
3TRIN
2TRER
1 RF
ERR RATE
CN312
IC304
X302
TCMK-P3X
GND
IC301
IC303
GFS
+5 -5 GND
GND
1DOUT
3GND
CN305
CN301
+8V
GND
-8V
POWER
1+8V 4+5V
2GND 5GND
3-8V 6-5V
CN306
MUTE
DF GND
1G, 2T, 3R
4XRST
5MUTE6~8DF
J301
CDP UNIT
DAIF UNIT
CN351 (CDP1)
CN353 (CDP2)
PSSB UNIT
CN158 (CDP1)
CN159 (CDP2)
DAIF UNIT
CN352 (CDP1)
CN354 (CDP2)
(DNP1554 - D)

- This diagram is viewed from the mounted parts side.

- This diagram is viewed from the pink colored foil side.
- This PCB is double sided.

- The parts mounted on this PCB include all necessary parts for several destinations.
  For further information for respective destinations, be sure to check with the schematic diagram.


CDP UNIT (DWP1061)
SERVO MECHANISM ASSY-S (DXX2188)
PICKUP ASSY-S (DXX2185)
MECB UNIT (DWX1436)
S610 DSG1016 INSIDE SWITCH
CARRIAGE DC MOTOR ASSY PEA1246
SPINDLE MOTOR DXM1063
CN312 B5SP-SHF-1AA
CN311 B6SP-SHF-1AA
TP. POINT
CN302 12FMZ-ABT
CN303 173981-4
CN304 B11B-PH-K-S
CN301 S6B-EH
CN305 S3B-EH
CN306 S8B-PH-K-S
FOCUS DRIVE
TRACKING DRIVE
CARRIAGE DRIVE
IC304: LA6520
IC301: SERVO CONTROL
IC301 CXA1372Q
IC302: DECODER
IC302 CXD2500BQ
TC7WU04F IC308
X301 16.9344MHz
IC303
Q301-Q303: BUFFER
DYW1347- MECHANISM CONTROL IC
IC307: NJM2902M
SPINDLE F/Rsig.
F/R COMPARATER
F KICK sig.
IC306 TC4W53F
F/R KICK SELECT
R KICK sig.
SPINDLE
IC305 LB1687
IC305: SPINDLE DRIVE IC
IC309 SN74LS624NS
VCO 15.2MHz-18.6MHz
IC310 TC74HCT04AF
INVERTER BUFFER
X302 8.304MHz DSS1010
F301-F303: NOISE FILTER
RESET INPUT
SERIAL COMMUNICATION (RECEPTION)
SERIAL COMMUNICATION (TRANSMISSION)
REMOTE CONTROL sig.
SERIAL COMMUNICATION/REMOTE CONTROL SWITCH
J301 (2/2) DKN1028-(2/2)
J301 (1/2) DKN1028-(1/2)
REMOTE CONTROL JACK for SERVICE
TO PSSB UNIT CN158 (CDP1) CN159 (CDP2) (⇒SCH-2)
TO DAIF UNIT CN351 (CDP1) CN353 (CDP2) (⇒SCH-3)
TO DAIF UNIT CN352 (CDP1) CN354 (CDP2) (⇒SCH-3)
EARTH METAL VNF-091-
GNDF
CHASSIS GND
FOCUS GAIN
TRKG GAIN
: EFM SIGNAL ROUTE
: DIGITAL SIGNAL ROUTE

5. PCB PARTS LIST

NOTES:

- *Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *Parts marked by "◉" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.*
- *When ordering resistors, first convert resistance values into code form as shown in the following examples.*

Ex.1 When there are 2 effective digits(any digit apart from 0), such as 560 ohm and 47k ohm(tolerance is shown by J=5%, and K=10%).

560 Ω → 56 × 10^1 → 561 ………………………… RD1/8PM$\boxed{5}\boxed{6}\boxed{1}$J
47k Ω → 47 × 10^3 → 473 ………………………… RD1/4PS$\boxed{4}\boxed{7}\boxed{3}$J
0.5 Ω → 0R5 ………………………… RN2H$\boxed{0}\boxed{R}\boxed{5}$K
1 Ω → 010 ………………………… RS1P$\boxed{0}\boxed{1}\boxed{0}$K

Ex.2 When there are 3 effective digits(such as in high precision metal film resistors).

5.62k Ω → 562 × 10^1 → 5621 ………………………… RN1/4PC$\boxed{5}\boxed{6}\boxed{2}\boxed{1}$F

LIST OF ASSEMBLIES

Mark	No. Description	Part No.
	DACB UNIT	DWM1410
	CMEC UNIT	DWM1524
NSP	PWSB UNIT	DWM1523
	├ PSSB UNIT	DWR1237
	├ PSPB UNIT	DWR1238
	├ DAIF UNIT	DWX1648
	├ CNCT UNIT	DWX1649
	├ DXLR UNIT	DWX1650
	├ AUOB UNIT	DWX1651
	└ ACNB UNIT	DWX1652
NSP	MOTHER UNIT	DWM1525
	├ DGIF UNIT	DWX1656
	├ ANLG UNIT	DWX1657
	├ XLR1 UNIT	DWX1658
	└ XLR2 UNIT	DWX1659
	CMLB UNIT	RWM1677
NSP	├ FCNB UNIT	RWZ3069
NSP	├ ENCB UNIT	RWZ3070
NSP	├ CMSL UNIT	RWZ3071
	├ KEYB UNIT	RWZ3072
	├ LEDB UNIT	RWZ3073
	├ SSDC UNIT	RWZ3074
NSP	├ LAMP UNIT	RWZ3075
NSP	├ SSEB UNIT	RWZ3076
NSP	└ SSAB UNIT	RWZ3077
	MECB UNIT	DWM1526
NSP	├ VCNB UNIT	RWZ3059
	├ LVUP UNIT	RWZ3060
	├ LVDN UNIT	RWZ3061
	├ RVUP UNIT	RWZ3062
	├ RVDN UNIT	RWZ3063
NSP	├ CNNB UNIT	RWZ3065
NSP	├ SWGB UNIT	RWZ3066
	└ SWSB UNIT	RWZ3131
NSP	BUILT IN CD CHANGER CDP	PD-CACV5000
	└ CD PLAYER(for service)	DXX2276
	├ CDP UNIT	DWP1061
	└ SERVO MECHANISM ASSY-S	DXX2188
NSP	├ MECB UNIT	DWX1436
	└ PICKUP ASSY-S	DXX2185

DACB UNIT

SEMICONDUCTORS

Mark	No. Description	Part No.
⚠	IC620, IC621	ICP-N5
	IC554, IC555, IC615	NJM5532DD
⚠	IC501, IC502	NJM7805FA
	IC522, IC523	SAA7350GP
	IC513	SM5813AP
	IC512	TC74HCU04AP
⚠	Q625	2SA1283
	Q621, Q623	2SB715
⚠	Q617, Q622	2SB857
	Q554-Q557, Q562, Q563	2SC3068
⚠	Q626	2SC3243
⚠	Q619, Q624	2SD1133
	Q618, Q620	2SD755
	Q522, Q523	DTA124ES
	Q521, Q524, Q525	DTC124ES
⚠	D620-D627	10DF2
	D632	10DF2
	D521, D550, D551, D570, D571	1SS254
	D628-D631	HZ5CLL

COILS

Mark	No. Description	Part No.
	L511, L512, L522, L523	LAU010K
	L501-L505, L601-L604	PTH1006

CAPACITORS

Mark	No. Description	Part No.
	C616	CEAS471M25
	C505	CENA101M25
	C516, C519	CENA102M16
	C606, C607	CENA102M35
	C604, C605	CENA222M35
	C520, C522, C523, C526, C527	CENA470M25
	C530, C531, C534, C535, C538	CENA470M25
	C540, C591, C593, C602, C603	CENA470M25
	C620, C621	CENA470M25
	C578, C579	CENA471M35
	C568-C571	CENA471M50
	C501, C502, C515	CFTXA102J50
	C503, C504, C506-C508	CFTXA103J50
	C511-C513, C576, C577, C596	CFTXA103J50
	C598, C608-C615, C624, C625	CFTXA103J50
	C597	CFTXA104J50
	C510, C514, C521, C524, C525	CFTXA473J50
	C528, C529, C532, C533	CFTXA473J50
	C536, C537, C539, C541	CFTXA473J50
	C546, C547, C558, C559, C586	CFTXA473J50
	C592, C594	CFTXA473J50
	C566, C567	CFTXA562J50
	C564, C565	CFTXA681J50
	C582, C583	CFTXA683J50
	C560-C563	CMA220J500
	C542, C543, C548-C551	CQSF101J50
	C556, C557	CQSF101J50
	C552-C555, C580, C581	CQSF471J50
	C589, C590	CQSF471J50
	C572, C573 (47 μF/50V)	PCH1094
	C544, C545 (470 μF/50V AC)	PCH1098
	C587, C588 (22 μF/35V AC)	PCH1099

RESISTORS

Mark	No. Description	Part No.
	R540, R541, R552, R553	RDR1/4PM101J
	R571, R574	RDR1/4PM105J
	R579, R581	RDR1/4PM122J
	R645, R646	RDR1/4PM132J
	R576, R577	RDR1/4PM162J
	R570, R573	RDR1/4PM221J
	R582, R583	RDR1/4PM223J
	R578, R580	RDR1/4PM242J
	R550, R551	RDR1/4PM243J
	R588, R589	RDR1/4PM271J
	R542-R545, R556-R559	RDR1/4PM303J
	R584, R585	RDR1/4PM471J
	R655, R656	RDR1/4PM472J
	R651, R652	RDR1/4PM4R7J
	R590, R591	RDR1/4PM511J
	R659, R660	RDR1/4PM512J
	R564-R567	RDR1/4PM562J
	R657, R658	RDR1/4PM682J
	R568, R569	RDR1/4PM751J
	R546-R549, R560-R563	RDR1/4PM822J
	R647, R648	RN1/4PQ3001F
	R649, R650	RN1/4PQ4301F
⚠	R653, R654	RS1LMF4R7J
	Other Resistors	RD1/6PM□□□J

OTHERS

Mark	No.	Description	Part No.
	CN503	KR CONNECTOR 3P	B3B-PH-K-R
	CN502, CN504	KR CONNECTOR 3P	B3B-PH-K-S
⚠	CN603	4P TOP POST(VH)	B4P-VH
		CONNECTOR ASSY	DKP2408
		SCREW	IBZ30P100FCC
		BINDER	PEC-107
		EARTH METAL	VNF-091

CMEC UNIT

SEMICONDUCTORS

Mark	No. Description	Part No.
⚠	IC108	4AM12
	IC106	BA10339
	IC212	BA10393
	IC207	DYW1501
	IC201	HD6415108F10
	IC208	HD74HC11P
⚠	IC202	LM2940CT-5.0
	IC205	M6M80021L
	IC206	MB8464A-10LLP
	IC101, IC204, IC209	MC74HC00AN
	IC107	MC74HC32AN
	IC104, IC105	NJM4565D-A
	IC203	PST523E
⚠	IC111	TA7288P
⚠	IC109, IC110	TA7291P
	IC102	TC4077BP
	IC103	TC74HC123AP
	IC210	TC74HC138AP
	IC211	TC74HC573AP
	Q107, Q108, Q201	2SA1048
	Q202	2SC2458
	Q103, Q105	DTA124ES
	Q101, Q102, Q104, Q106, Q109	DTC124ES
	Q203, Q204	DTC124ES
	D101-D106, D109	1SS254
	D111	MTZJ10B
	D107, D108, D110	MTZJ7.5B
	D112, D201, D205-D212	MTZJ8.2B

COIL

Mark	No. Description	Part No.
	L201	LFA220K

CAPACITORS

Mark	No. Description	Part No.
	C213, C214	CCCCH100D50
	C208	CEAS100M50
	C102, C218, C220, C227, C232	CEAS101M10
	C239	CEAS101M10
	C201, C202	CEAS101M16
	C120	CEAS220M50
	C206	CEAS331M16
	C207, C211, C217	CEAS331M6R3
	C124	CEAS470M25
	C121	CEASR47M50
	C111-C113	CFTXA224J50
	C109, C110	CFTXA823J50
	C210, C212	CGCYX104M25
	C209, C215	CKCYB102K50
	C219, C221, C228, C231	CKCYF103Z50
	C234, C235	CKPUYF103Z25
	C101, C105, C118, C119, C123	CKPUYF223Z25
	C125-C130, C205, C216	CKPUYF223Z25
	C222-C226, C230, C233	CKPUYF223Z25
	C108	CQMA102J50
	C106, C107	CQMA152J50
	C122	CQMA223J50
	C104	CQMA392J50
	C229	CQMA471J50
	C103, C114, C115	CQMA472J50

Mark	No.	Description	Part No.
	C116, C117		CQMA473J50
	C236	(2200pF×8)	DCG1004

RESISTORS

	R355		RA4T103J
	R352		RA6T103J
	R350, R354		RA8T103J
	R353		RA8T223J
	R351		RA9T103J
	R132, R133		RD1/2LF4R7J
	R112, R113		RN1/6PQ4702F
⚠	R147, R148		RS3LMFR22J
	VR101		VRTB6VS103
	Other Resistors		RD1/6PM□□□J

OTHERS

	CN315	MT CONNECTOR 3P	173981-3
	CN307	MT CONNECTOR 5P	173981-5
	CN310	MT CONNECTOR 7P	173981-7
	CN301	MT CONNECTOR 8P	173981-8
	CN306	MT CONNECTOR 9P	173981-9
	CN314	2P TOP POST	B2P-SHF-1AA
	CN311	KR CONNECTOR 4P	B4B-PH-K-S
	CN313	KR CONNECTOR 8P	B8B-PH-K-Y
		HEAT SINK 2	DNG1033
		HEAT SINK 3	DNG1034
		IC SOCKET	OKH1005
		HEAT SINK A	RNE1752
	X201	CRYSTAL RESONATOR (19.6608MHz)	RSS1040

PSSB UNIT

SEMICONDUCTORS

⚠	IC109, IC110		ICP-N10
⚠	IC107		ICP-N15
⚠	IC108		ICP-N20
⚠	IC101, IC102		NJM7808FA
⚠	IC104		NJM78M05FA
⚠	IC105		NJM78M05FA
⚠	IC103		NJM7908FA
⚠	IC106		NJM79M05FA
⚠	Q101		2SD2395
⚠	D105		D3SBA20/4103
⚠	D108		MTZJ13B
⚠	D107		RBA-406B
⚠	D106		S2VB20-F1

CAPACITORS

	C121, C124, C127		CEAS101M10
	C116		CEAS222M25
	C117		CEAS682M16
	C129		CEAS470M16
	C120, C122, C123		CEAS470M25
	C125, C126, C128, C130		CEAS470M25
	C111-C114		CKCYF473Z50
	C115, C118 (8200μF/25V)		DCH1042
	C119		CEHAQ470M25

RESISTORS

	R109		RS3LMF2R2J
	Other Resistors		RD1/6PM□□□J

Mark	No.	Description	Part No.
OTHERS			
		HEAT SINK(L)	ANH-575
		EARTH METAL	ANK-142
	CN160	2P TOP POST(EH)	B2B-EH
	CN162	4P TOP POST(VH)	B4P-VH
	CN163	6P VH CONNECTOR	B6P-VH
	CN164	6P VH CONNECTOR	B6P-VH-R
	CN157	7P VH CONNECTOR	B7P-VH
		PCB BINDER	DEF1015
		HEAT SINK B	REF1003
	H10-H30, H9	FUSE HOLDER	RKR1002

PSPB UNIT

COILS

⚠	L101, L102		DTL1016

CAPACITORS

⚠	C101-C109	(0.01μF/250V AC)	ACG7005

OTHERS

⚠	CN155	2P VH CONNECTOR	B2P3-VH
⚠	CN151	2P VH CONNECTOR	B2P4-VH
⚠	CN153	7P VH CONNECTOR	B7P-VH
⚠	CN152	8P VH CONNECTOR	B8P-VH
		PCB BINDER	DEF1015
	H1-H8	FUSE HOLDER	RKR1002

DAIF UNIT

SEMICONDUCTORS

	IC212		BU4053BC
	IC205, IC210		CS8402A-CS
	IC204, IC209		TC74HC02AP
	IC202, IC203, IC207, IC208		TC74HC74AP
	IC201, IC206		TC74HCU04AP
	Q201-Q204		DTC124ES
	D201, D202		1SS254

COILS

	L201-L204		RTF1171

CAPACITORS

	C202, C204, C206, C208, C210		CEAS101M10
	C212, C214, C216, C218, C220		CEAS101M10
	C239		CEAS101M10
	C201, C203, C205, C207, C209		CKCYF103Z50
	C211, C213, C215, C217, C219		CKCYF103Z50
	C238		CKCYF103Z50

RESISTORS

	All Resistors		RD1/6PM□□□J

OTHERS

	CN356	MT CONNECTOR 5P	173981-5
	CN355	MT CONNECTOR 8P	173981-8
		EARTH METAL	ANK-142
	CN361	10P TOP POST	B10B-EH-R
	CN359	10P TOP POST	B10B-EH-Y

Mark	No.	Description	Part No.
	CN363	KR CONNECTOR 2P	B2B-PH-K-S
	CN353	3P TOP POST	B3B-EH-R
	CN360	KR CONNECTOR 3P	B3B-PH-K-R
	CN366	KR CONNECTOR 3P	B3B-PH-K-S
	CN358	KR CONNECTOR 3P	B3B-PH-K-Y
	CN365	KR CONNECTOR 5P	B5B-PH-K-R
	CN364	KR CONNECTOR 5P	B5B-PH-K-Y
	CN352	KR CONNECTOR 8P	B8B-PH-K-Y

CNCT UNIT

SEMICONDUCTORS

Mark	No.	Description	Part No.
	IC254		SN75176BP
	IC253		SN75179BP
	IC251, IC252		TC74HCU04AP
	D251-D258		1SS254

COILS AND FILTERS

Mark	No.	Description	Part No.
	L251, L252		PTL1003
	F252-F255		VTH1001

CAPACITORS

Mark	No.	Description	Part No.
	C252, C258, C264		CEAS101M10
	C265		CEAS470M16
	C254, C260		CEAS470M25
	C255, C261		CKCYB471K50
	C251, C253, C257, C259, C263		CKCYF103Z50
	C267		CKCYF103Z50
	C256, C262		CKCYF472Z50

RESISTORS

Mark	No.	Description	Part No.
	R259		RD1/2LF102J
	Other Resistors		RD1/6PM□□□J

OTHERS

Mark	No.	Description	Part No.
	CN383	MT CONNECTOR 3P	173981-3
	CN379	2P TOP POST(EH)	B2B-EH
	CN381	KR CONNECTOR 3P	B3B-PH-K-E
	CN382	KR CONNECTOR 4P	B4B-PH-K-E
		PCB BINDER	DEF1015
	JA301	9P D-SUB SOCKET	DKN1051
	JA302, JA303	1P PIN JACK	PKB1004

DXLR UNIT

SEMICONDUCTORS

Mark	No.	Description	Part No.
	IC211		M5M34051P
	IC213		PST993E
	D203-D210		1SS254

COILS

Mark	No.	Description	Part No.
	L216		RTF1171
	L209, L210		RTL1002
	L205-L208		VTH1026

CAPACITORS

Mark	No.	Description	Part No.
	C227, C228, C231, C232		CCCCH470J50
	C236		CEAS101M10
	C229, C233		CGCYF104Z50
	C237		CKCYF103Z50

RESISTORS

Mark	No.	Description	Part No.
	R226-R229		RD1/2LMF220J
	Other Resistors		RD1/6PM□□□J

OTHERS

Mark	No.	Description	Part No.
	CN378	2P TOP POST(EH)	B2B-EH
	CN387, CN388	3P RECEPTACLE	PKP1004

AUOB UNIT

COILS

Mark	No.	Description	Part No.
	L271-L276		RTF1167

CAPACITORS

Mark	No.	Description	Part No.
	C271-C276		CKCYF102Z50

RESISTORS

Mark	No.	Description	Part No.
	All Resistors		RD1/6PM□□□J

OTHERS

Mark	No.	Description	Part No.
	JA304-JA306	2P PIN JACK	DKB1045

ACNB UNIT

OTHERS

Mark	No.	Description	Part No.
	CN373	KR CONNECTOR 3P	B3B-PH-K-R
	CN372	KR CONNECTOR 3P	B3B-PH-K-S
	CN370	KR CONNECTOR 3P	B3B-PH-K-Y
	CN371	KR CONNECTOR 3P	B3B-PH-K-K
	CN390, CN391	KR CONNECTOR 4P	B4B-PH-K-E
	CN377	KR CONNECTOR 4P	B4B-PH-K-R
	CN376	KR CONNECTOR 4P	B4B-PH-K-Y
		PCB BINDER	DEF1015

DGIF UNIT

SEMICONDUCTORS

Mark	No.	Description	Part No.
⚠	IC404		LM2940CT-5.0
	IC406, IC407		PD0026A
	IC401, IC402		PD0037
	IC405, IC408		TC74HCU04AP
	Q403, Q406, Q407, Q409		DTA124ES
	Q401, Q402, Q404, Q405, Q408		DTC124ES
	Q410, Q411		DTC124ES
⚠	D407-D414		10DF2
	D402, D403, D405, D406, D416		1SS254
	D418		MTZJ3.9B
	D417		MTZJ4.7B
⚠	D415		S1VB20/F03

COILS

Mark	No.	Description	Part No.
	L401-L404		LAU330J

CAPACITORS

Mark	No.	Description	Part No.
	C407, C413, C420, C426		CCCCH220J50
	C472, C473		CCCCH470J50
	C408, C421		CCCCH680J50
	C445, C446		CCCSL221J50
	C401, C405, C410, C411, C414		CEAS101M10

Mark	No.	Description	Part No.
	C418, C423, C424, C441, C442		CEAS101M10
	C471		CEAS101M10
	C438		CEAS222M25
	C433, C434		CEAS222M35
	C443		CEAS330M35
	C404, C417		CFTXA224J50
	C403, C416, C427-C432		CKCYF103Z50
	C435-C437, C439, C440, C444		CKCYF103Z50
	C470		CKCYF103Z50
	C402, C406, C409, C412, C415		CKCYF472Z50
	C419, C422, C425		CKCYF472Z50

RESISTORS

Mark	No.	Description	Part No.
	All Resistors		RD1/6PM□□□J

OTHERS

Mark	No.	Description	Part No.
	KN	EARTH METAL	ANK-142
	CN414	KR CONNECTOR 2P	B2B-PH-K-S
	CN411	KR CONNECTOR 3P	B3B-PH-K-E
	CN405	KR CONNECTOR 3P	B3B-PH-K-S
	CN410	KR CONNECTOR 4P	B4B-PH-K-E
	CN408	KR CONNECTOR 4P	B4B-PH-K-S
	CN417, CN418	4P TOP POST(VH)	B4P-VH
	CN402	KR CONNECTOR 5P	B5B-PH-K-R
	CN401	KR CONNECTOR 5P	B5B-PH-K-Y
	CN407	6P VH CONNECTOR	B6P-VH-R
	J415, J416	WARTH WIRE	DKP3183

ANLG UNIT

SEMICONDUCTORS

Mark	No.	Description	Part No.
	IC110-IC113		NJM4556AL
	IC102, IC103, IC105, IC106, IC109		NJM5532SD
⚠	IC114		NJM78M12FA
⚠	IC115		NJM79M12FA
	Q130		2SA1048
	Q128, Q129		2SC2458
	Q105-Q110, Q120-Q127		2SD2144S
	D107-D112, D132-D140		1SS254
	D141		MTZJ8.2B

CAPACITORS

Mark	No.	Description	Part No.
	C148, C150, C151, C153, C154		CCCSL151J50
	C156, C157, C159, C160		CCCSL151J50
	C162, C163, C165, C166		CCCSL151J50
	C168, C169, C171		CCCSL151J50
	C110, C111, C125-C128		CEANP470M25
	C140, C144, C149, C152, C155		CEAS101M25
	C158, C161, C164, C167, C170		CEAS101M25
	C103, C106, C109, C112		CEAS470M25
	C172-C190		CEAS470M25
	C137, C141, C191		CEAS471M35
	C138, C139, C142, C143		CKCYF103Z50
	C192-C195		CQMA102J50

RESISTORS

Mark	No.	Description	Part No.
	R213-R216, R229, R231, R232		RN1/6PQ1002F
	R234, R245, R247, R248, R250		RN1/6PQ1002F
	R261, R263, R264, R266		RN1/6PQ1002F
	R209-R212, R225-R228		RN1/6PQ3601F
	R241-R244, R257-R260		RN1/6PQ3601F
	Other Resistors		RD1/6PM□□□J

OTHERS

Mark	No.	Description	Part No.
	KN	EARTH METAL	ANK-142
	CN921	KR CONNECTOR 4P	B4B-PH-K-R
	CN905	KR CONNECTOR 4P	B4B-PH-K-S
	CN922	KR CONNECTOR 4P	B4B-PH-K-Y

XLR1 UNIT

COILS

Mark	No.	Description	Part No.
	L801-L804		RTF1167

CAPACITORS

Mark	No.	Description	Part No.
	C801-C804		CKCYF103Z50

OTHERS

Mark	No.	Description	Part No.
	CN801, CN802	3P RECEPTACLE	PKP1004

XLR2 UNIT

COILS

Mark	No.	Description	Part No.
	L805-L808		RTF1167

CAPACITORS

Mark	No.	Description	Part No.
	C805-C808		CKCYF103Z50

OTHERS

Mark	No.	Description	Part No.
	CN803, CN804	3P RECEPTACLE	PKP1004

FCNB UNIT

SEMICONDUCTORS

Mark	No.	Description	Part No.
	D632, D634		SEL6410G
	D631, D633		SEL6C10R

RESISTORS

Mark	No.	Description	Part No.
	R631		RA4S561J
	Other Resistors		RD1/6PM□□□J

OTHERS

Mark	No.	Description	Part No.
	CN101, CN102	FLEXIBLE CONNECTOR	5597-23APB

ENCB UNIT

SEMICONDUCTORS

Mark	No.	Description	Part No.
	IC601		GP1A30R

CAPACITORS

Mark	No.	Description	Part No.
	C601		CKPUYF223Z25

RESISTORS

Mark	No.	Description	Part No.
	All Resistors		RD1/6PM□□□J

OTHERS

Mark	No.	Description	Part No.
	CN107	KR CONNECTOR 4P	S4B-PH-K-S

CMSL UNIT

SWITCHES

Mark	No.	Description	Part No.
	S611-S613		DSG1015

CAPACITOR

Mark	No.	Description	Part No.
	C611		CKPUYF223Z25

OTHERS

Mark	No.	Description	Part No.
	CN105	MT CONNECTOR 2P	173981-2
	CN104	KR CONNECTOR 3P	B3B-PH-K-S
	CN103	KR CONNECTOR 8P	B8B-PH-K-Y

KEYB UNIT

SEMICONDUCTORS

Mark	No.	Description	Part No.
	IC701		HD74HC165P
	D701-D704		MTZ8.2B

SWITCHES

Mark	No.	Description	Part No.
	S702		RSB1010
	S703-S710		RSG1034
	S701		RSX1005

CAPACITORS

Mark	No.	Description	Part No.
	C701		CKPUYF223Z25

RESISTORS

Mark	No.	Description	Part No.
	R701		RA8S103J
	Other Resistors		RD1/6PM□□□J

OTHERS

Mark	No.	Description	Part No.
	CN108	MT CONNECTOR 7P	173979-7
		EARTH METAL	VNF-091

LEDB UNIT

SEMICONDUCTORS

Mark	No.	Description	Part No.
	IC721		MC14489P
	D721-D723		SL-9284-22
	D724		SLH-56MC35H-S
	D725		SLH-56VC35H-S

CAPACITORS

Mark	No.	Description	Part No.
	C721		CKPUYF223Z25

RESISTORS

Mark	No.	Description	Part No.
	All Resistors		RD1/6PM□□□J

OTHERS

Mark	No.	Description	Part No.
	CN123	MT CONNECTOR 7P	173979-7
		EARTH METAL	RNK2028

SSDC UNIT

SEMICONDUCTORS

Mark	No.	Description	Part No.
	IC741		HD74HC165P
	Q742		2SC3246
	Q744		XDA144ES
	Q745, Q746		XDC114ES
	D741		11ES2

CAPACITORS

Mark	No.	Description	Part No.
	C745		CEAS101M10
	C741		CEAS101M25
	C746		CKCYF103Z50

RESISTORS

Mark	No.	Description	Part No.
	R747		RA7S103J
	Other Resistors		RD1/6PM□□□J

OTHERS

Mark	No.	Description	Part No.
	CN118	MT CONNECTOR 2P	173981-2
	CN115	MT CONNECTOR 3P	173981-3
	CN110	MT CONNECTOR 7P	173981-7
	CN109	MT CONNECTOR 9P	173981-9
	CN121	AMP CONNECTOR 2P	2-173981-2
	CN119	AMP CONNECTOR 2P	4-173981-2
	CN116	AMP CONNECTOR 3P	4-173981-3
	CN120	AMP CONNECTOR 2P	6-173981-2
	CN114	2P TOP POST(EH)	B2B-EH
		PCB BINDER	DEF1015

LAMP UNIT

No service part

SSEB UNIT

SEMICONDUCTORS

Mark	No.	Description	Part No.
	D621		SIR-56SB3H

OTHERS

Mark	No.	Description	Part No.
	CN106	MT CONNECTOR 2P	173981-2

SSAB UNIT

OTHERS

Mark	No.	Description	Part No.
	CN125	MT CONNECTOR 3P	173981-3
		REMOTE SENSOR	GP1U57X

VCNB UNIT

CAPACITORS

Mark	No.	Description	Part No.
	C101		CEAL101M6R3
	C102-C108		CKPUYF223Z25

OTHERS

Mark	No.	Description	Part No.
	CN203	MT CONNECTOR 3P	173979-3
	CN207	MT CONNECTOR 4P	173979-4
	CN202	AMP CONNECTOR 3P	4-173979-3
	CN201	FLEXIBLE CONNECTOR	5597-23APB
	CN205	AMP CONNECTOR 3P	6-173979-3
		EARTH METAL	VNF-091

LVUP UNIT

SEMICONDUCTOR

Mark	No.	Description	Part No.
	D202		GP1A15

CAPACITOR

Mark	No.	Description	Part No.
	C202		CKPUYF223Z25

RESISTORS

Mark	No.	Description	Part No.
	All Resistors		RD1/6PM□□□J

OTHERS

Mark	No.	Description	Part No.
	CN211	MT CONNECTOR 3P	173981-3

LVDN UNIT

SEMICONDUCTOR

Mark	No.	Description	Part No.
	D201		GP1A15

CAPACITOR

Mark	No.	Description	Part No.
	C201		CKPUYF223Z25

RESISTORS

Mark	No.	Description	Part No.
	All Resistors		RD1/6PM□□□J

OTHERS

Mark	No.	Description	Part No.
	CN210	AMP CONNECTOR 3P	4-173981-3

RVUP UNIT

SEMICONDUCTOR

Mark	No.	Description	Part No.
	D204		GP1A15

CAPACITOR

Mark	No.	Description	Part No.
	C204		CKPUYF223Z25

RESISTORS

Mark	No.	Description	Part No.
	All Resistors		RD1/6PM□□□J

RVDN UNIT

SEMICONDUCTOR

Mark	No.	Description	Part No.
	D203		GP1A15

CAPACITOR

Mark	No.	Description	Part No.
	C203		CKPUYF223Z25

RESISTORS

Mark	No.	Description	Part No.
	AlL Resistors		RD1/6PM□□□J

CNNB UNIT

OTHERS

Mark	No.	Description	Part No.
	CN215	FLEXIBLE CONNECTOR	5597-10APB

SWGB UNIT

CAPACITORS

Mark	No.	Description	Part No.
	C301, C302		CKPUYF223Z25

OTHERS

Mark	No.	Description	Part No.
	CN219	MT CONNECTOR 3P	173979-3
	CN221	AMP CONNECTOR 3P	4-173979-3
	CN216	FLEXIBLE CONNECTOR	52044-1010
	CN222	AMP CONNECTOR 3P	6-173979-3

SWSB UNIT

SWITCHES

Mark	No.	Description	Part No.
	S501-S503		DSG1017

OTHERS

Mark	No.	Description	Part No.
	CN224	MT CONNECTOR 4P	173979-4

CDP UNIT

SEMICONDUCTORS

Mark	No.	Description	Part No.
	IC301		CXA1372Q
	IC302		CXD2500BQ
	IC303		DYW1347
	IC304		LA6520
	IC305		LB1687
	IC307		NJM2902M
	IC309		SN74LS624NS
	IC306		TC4W53F
	IC310		TC74HCT04AF
	IC308		TC7WU04F
	Q301-Q303		DTC124EK

FILTERS

Mark	No.	Description	Part No.
	F301-F303		VTH1001

Mark	No.	Description	Part No.
CAPACITORS			
	C352		CCSQCH120J50
	C348, C349, C351		CCSQCH220J50
	C364		CCSQCH330J50
	C345		CEAS101M10
	C354, C356, C360, C363, C366		CEAS330M25
	C368, C370		CEAS330M25
	C301, C302, C306, C307		CEAS470M16
	C336, C343		CEAS470M25
	C324, C326		CEAS4R7M50
	C358		CEASR47M50
	C362		CKSQYB152K50
	C309		CKSQYB182K50
	C314		CKSQYB332K50
	C311, C318		CKSQYB333K50
	C312, C313		CKSQYB472K50
	C303-C305, C308, C310		CKSQYF103Z50
	C315-C317, C319-C322		CKSQYF103Z50
	C333-C335, C338, C344		CKSQYF103Z50
	C346, C347, C353, C355, C357		CKSQYF103Z50
	C359, C365, C367, C369		CKSQYF103Z50
	C323, C325, C327-C330, C332		CKSQYF104Z25
	C337, C339-C342		CKSQYF104Z25
	C361		CKSQYF473Z50
RESISTORS			
	R328	(0.47Ω, 1/4W)	DCN1035
	R317, R318, R330, R331		RN1/10SE103D
	VR301, VR302	(22kΩ)	RCP1084
	Other Resistors		RS1/10S□□□J
OTHERS			
	CN302	FFC CONNECTOR 12P	12FMZ-ABT
	CN303	MT CONNECTOR 4P	173981-4
	CN312	5P SIDE POST	BS5P-SHF-1AA
		PCB BINDER	DEF1012
		3P MINI JACK	DKN1028
	X302	CRYSTAL RESONATOR	DSS1010
	CN305	3P SIDE POST	S3B-EH
	CN301	6P SIDE POST	S6B-EH
		PCB BINDER	VEF1040
		64P SHRINK IC SOCKET	VKH1004
		EARTH METAL	VNF-091
	X301	CRYSTAL RESONATOR (16MHz)	VSS1081

Mark	No.	Description	Part No.
MECB UNIT			
SWITCH			
	S610		DSG1016
OTHERS			
	CN610	MT CONNECTOR 4P	173979-4
		P.C. BOARD	DNP1575

6. SERVICE MODE

1. DESCRIPTION OF THE DISPLAY SECTION AND OPERATION KEYS

The following parts for various displays and operation switches are located on the operation/display board.

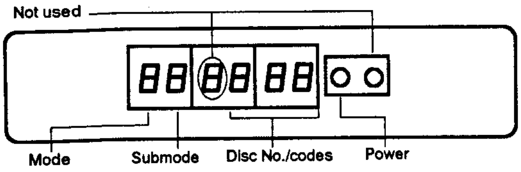

Not used
Mode
Submode
Disc No./codes
Power

Fig.1 Display section

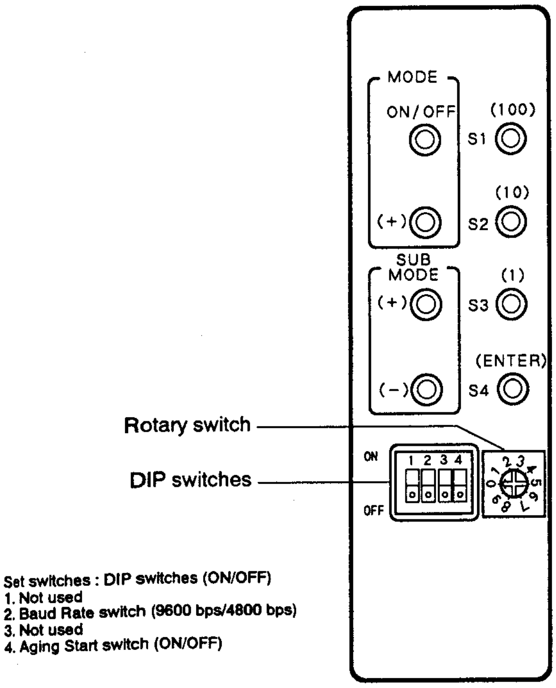

MODE
ON/OFF
(100)
S1
(10)
(+)
S2
SUB MODE
(1)
(+)
S3
(ENTER)
(-)
S4
Rotary switch
DIP switches
ON
OFF
1 2 3 4
Set switches : DIP switches (ON/OFF)
1. Not used
2. Baud Rate switch (9600 bps/4800 bps)
3. Not used
4. Aging Start switch (ON/OFF)

Fig.2 Operation keys

• IndicatorPower

Lights when the primary power switch is on, and flashes during the initializing operation.

• 7-segment LEDs

Mode : Indicates the current operating mode.

Submode : Indicates the current submode of the current operating mode.

Disc No./Codes : Indicates disc addresses, error codes, etc.

• Set switches

(Rotary switch)

Player Address Set :
Sets the address of a player, which will be required for remote control via the RS-422A port.
The relationship between the numbers around the rotary switch and the player addresses are as follows.

Table 1

No. around the rotary switch	Address of the left player	Address of the right player
0	1	2
1	3	4
•	•	•
•	•	•
9	19	20

Factory setting

(DIP switches ON/OFF)

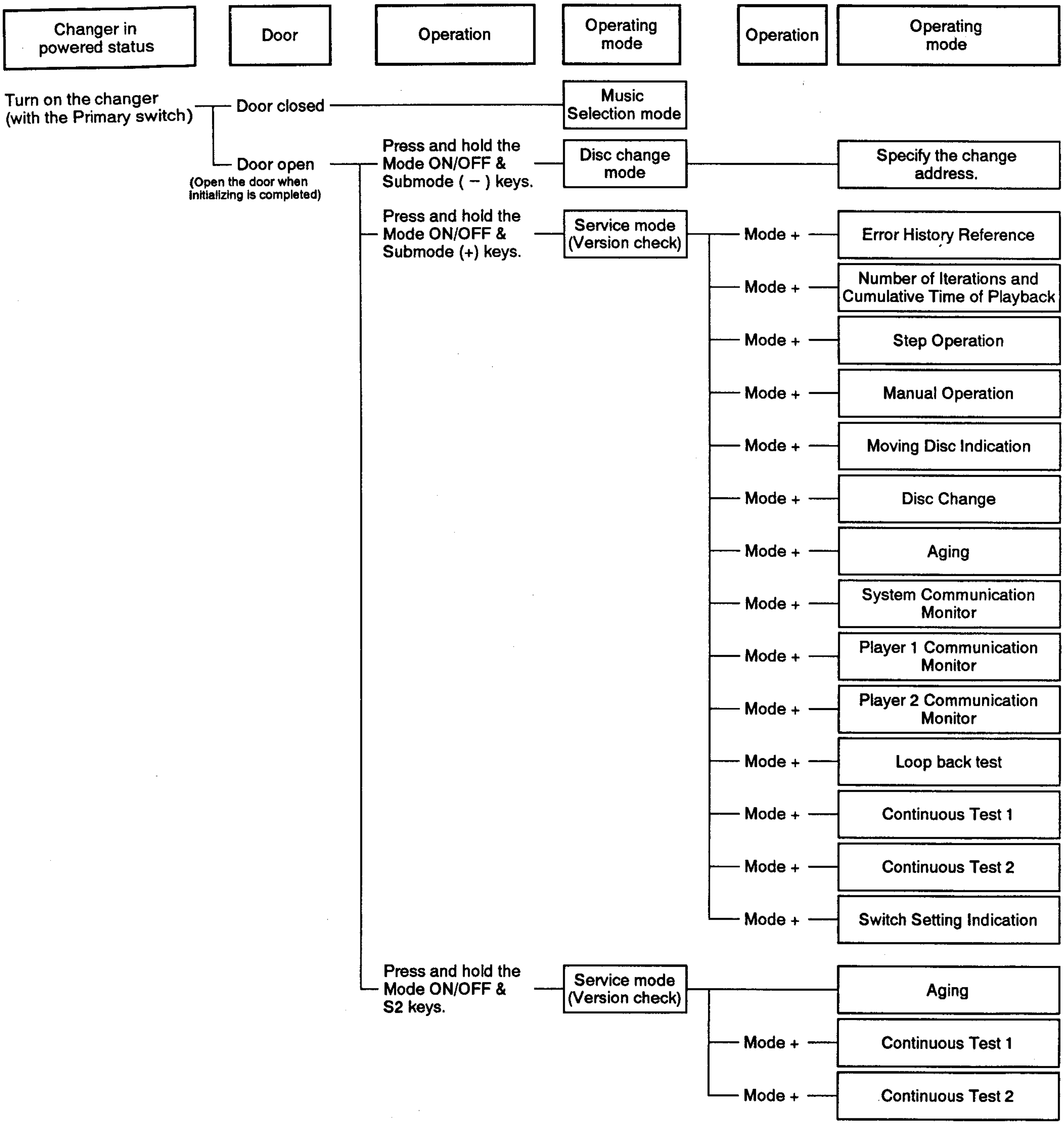
Baud Rate switch : Switches the speed of transmission via the RS-422A port.
ON: 9600 bps/OFF: 4800 bps

Aging Start : When the power is turned on with this switch ON, Aging mode for delivery inspection will start.
Factory settings of the set switches are all OFF position.

• Operation keys

Mode ON/OFF:	Used to enter/exit Service mode and to check the number of iteration of playback.
Mode + :	Selects modes of Service mode.
Submode +/ − :	Select submodes of Service mode.
S1 :	Specifies the hundreds digit of the elevating addresses.
S2 :	Specifies the tens digit of the elevating addresses.
S3 :	Specifies the units digit of the elevating addresses.
S4 :	Fixes the entered data and starts the operation.

2. MODE SUCCESSION


Changer in powered status
Door
Operation
Operating mode
Operation
Operating mode
Turn on the changer (with the Primary switch)
Door closed
Music Selection mode
Door open
(Open the door when initializing is completed)
Press and hold the Mode ON/OFF & Submode (–) keys.
Disc change mode
Specify the change address.
Press and hold the Mode ON/OFF & Submode (+) keys.
Service mode (Version check)
Mode +
Error History Reference
Mode +
Number of Iterations and Cumulative Time of Playback
Mode +
Step Operation
Mode +
Manual Operation
Mode +
Moving Disc Indication
Mode +
Disc Change
Mode +
Aging
Mode +
System Communication Monitor
Mode +
Player 1 Communication Monitor
Mode +
Player 2 Communication Monitor
Mode +
Loop back test
Mode +
Continuous Test 1
Mode +
Continuous Test 2
Mode +
Switch Setting Indication
Press and hold the Mode ON/OFF & S2 keys.
Service mode (Version check)
Aging
Mode +
Continuous Test 1
Mode +
Continuous Test 2

Note :
- Service mode have other mode besides Fig. 1, do not oprates the other mode because of it used for checking.
- When, the operation is activated, release from the service mode by pressing the Mode ON/OFF key and enter the service mode again.
- When the error is not occured, changer can not enter the service mode before initialization is completed.

Fig.3 Mode succession

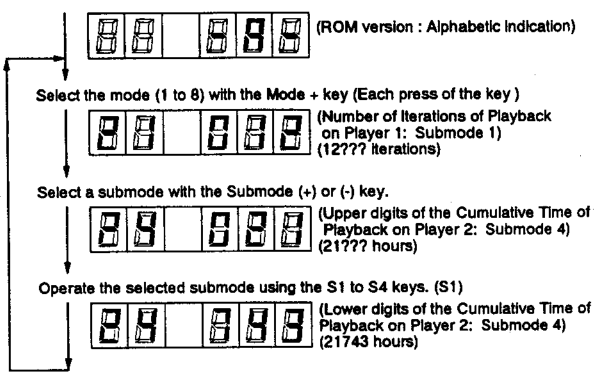
3. SERVICE MODE

• To Enter Service Mode

Turn on the changer with the door closed, and initialization of the mechanisms is performed. When initialization is completed, open the door and press and hold the Mode ON/OFF and Submode (+) keys for more than 3 seconds to enter Service mode.

Note : • If a disc has been set onto the carriage base, be sure to remove it before entering Service mode.
• When the error is not occured, changer can not enter the service mode before initialization is completed.

(Example)


(ROM version : Alphabetic Indication)
Select the mode (1 to 8) with the Mode + key (Each press of the key)
(Number of Iterations of Playback on Player 1: Submode 1) (12??? iterations)
Select a submode with the Submode (+) or (-) key.
(Upper digits of the Cumulative Time of Playback on Player 2: Submode 4) (21??? hours)
Operate the selected submode using the S1 to S4 keys. (S1)
(Lower digits of the Cumulative Time of Playback on Player 2: Submode 4) (21743 hours)

• To Release Service Mode

Close the door.

↓

The initializing operation of the mechanisms starts in about 2 seconds and the carriage base stops at the lowermost position.

Table 2 Service modes

Mode	Display	Submode	Display	Normal displayx3	S1 key (100)	S2 key (10)	S3 key (1)	S4 key (Input)	Submode −	Submode +
Microcomputer Version		(Example − A −)		- A -						
Error History (8 histories)	1	Error History New to Old	1 to 8	Error Code *	Detail Code *	Control Code *	Error address or disc	All clear (press and hold)		
Operation time	2	Number of Iterations of Playback PL1 PL2 Cumulative time of playback PL1 PL2 Powered time	1 2 3 4 5	Upper digits Upper digits Upper digits Upper digits Upper digits	Lower digits Lower digits Lower digits Lower digits Lower digits			Clear (press and hold) Clear (press and hold) Clear (press and hold) Clear (press and hold) Clear (press and hold)		
Step Operation	3			Address/ n01 - 15 r01 - 13	Upward movement	Downward movement	n+or r→n operation	r+or n→r operation	Disc tabel open/close	Swing left/right selection
Manual	4	Vertical movement Disc table Swing Slide Chuck clamp upper PL	1 2 3 4 5 6	Address Mecha. position Mecha. position Mecha. position Mecha. position Mecha. position	Upward Home Rightward Forward Close Clockwise	Downward Toward the front Leftward Backward Open Counterclockwise				
Moving Disc Indication	5			On the carriage base	In Player 1	In Player 2				
Disc change	6	Replace Insert Eject	1 2 3		Hundreds digit Hundreds digit Hundreds digit	Tens digit Tens digit Tens digit	Units digit Units digit Units digit	Execution Execution Execution		
Aging	7	Submode 1 Submode 2 Submode 3	1 2 3				Stop Stop Stop	Start Start Start		
System Communication Monitor	8	Communication history New to Old	1 to 9	Sequence of bytes + data	Byte advance	Byte reverse				
Communication Monitor Player1 Player2	9 A	Communication history New to Old	1 to 9	Sequence of bytes + data	Byte advance	Byte reverse				
Loopback test	b			Send/receive data				Start		

- In step operation (3), the swing direction is selected with the Submode (+) key.
- When the decimal point in the 7-segment LED display is not lit, it indicates that the left-side stockers (1-50, 101-150, 201-250, 301-350, 401-450, PL1) are selected. When the decimal point is lit, it indicates that the right-side stockers (51-100, 151-200, 251-300, 351-400, 451-500, PL2) are selected.
- The items marked with an asterisk are described as following sections.

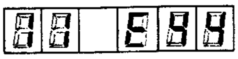
4. MODES DESCRIPTION

4.1 Error History Mode

A total of eight sets of error history including the newest error information can be stored and maintained even while the power is off.

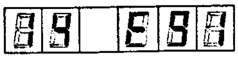
For the table of the errors, warnings and information and of the control codes. (Refer to pages 100 to 108.)

When Error History mode is entered, the following display is obtained.



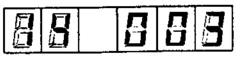
(Latest error)

With the Submode key, specify the sequence number of the error history to be displayed.

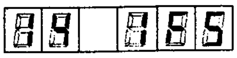


(Forth error)

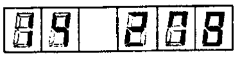
Press and hold the S1, S2 or S3 key to select the detail code, control code, or error address or disc, respectively.



(S1 key: Detail code of the fourth error)



(S2 key: Control code of the fourth error. When changing discs, swing is not possible after inserting the disc.)



(S3 key: Address at which the fourth error occurred, or the disc number if the error is a player error.)

* Player 1 position : address 507
* Player 2 position : address 557

Pressing and holding the S4 key clears all the error-history data.

4.2 Number of Iterations of Playback/Cumulative Time of Playback/Powered Time of Player

The display shows the upper 3 digits of a six-digit number. The lower 3 digits will be displayed while the S1 key is being held.

The powered time means the cumulative time while the power to the changer is on.

Pressing and holding the S4 key clears the number of iterations and the cumulative times.

The number of iterations and the cumulative times are maintained even while the power is off.

Table 3

Number of Iterations of Playback		**Display (Upper/Lower digits)**
Player 1	max. 799999 iterations	(3 digits + 3 digits)
Player 2	max. 799999 iterations	(3 digits + 3 digits)
Cumulative Playback Time		**Display (Upper/Lower digits)**
Player 1	max. 799999 hours	(3 digits + 3 digits) *
Player 2	max. 799999 hours	(3 digits + 3 digits) *
Powered Time		**Display (Upper/Lower digits)**
	max. 799999 hours	(3 digits + 3 digits) *

* : The time is counted and stored in increments of one minute.

Note : When the error is not occured, changer can not enter the service mode before initialization is completed.

4.3 Step Operation Mode (Operated on the Player Corresponding to the Specified Disc)

Pressing the S1 or S2 key elevates the carriage base and pressing the S3 or S4 key triggers each step operation.
When a key is pressed during a certain display, the corresponding operation is executed, as shown below.
The disc which is moved in step operation can be automatically returned to its original position unless removed.

Set and play one disc at a time on the player. Simultaneous playback of multiple discs is not possible.
Note that the step operation cannot be performed after a vertical-movement error, which may show an incorrect address.

Table 4

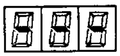
Operating status	Display	Operation	Description
Disc eject	* Vertical address	Vertical movement	Moves the carriage base vertically.
	n 02	Swing	Causes the slide mechanism to swing by 30 degrees and go to the rack.
	n 03	Slide	Extends the arm from the home position.
	n 04	Chuck	Chucks the disc.
	n 05	Slide	Folds the arm to the home position.
	n 06	Swing	Swings back to the center.
	Vertical address	Vertical movement	Moves vertically to the player position.
	n 08	Swing	Swings by 30 degrees and goes to the vacant player.
	n 09	Slide	Extends the arm.
	n 00	Chuck	Releases the disc.
	n 01	Slide	Folds the arm to the home position.
	n 02	Swing	Swings back to the center.
	n 13	Clamp	Causes the clamper to clamp the disc.
	n 14	Play	Play the disc.
	n 15	During play	Keeps playing the disc.
	- 0P	Slide	Moves the arm from the home position to the disc-eject position.
Disc return	* Vertical address	Vertical movement	Moves the carriage base vertically to the player position.
	r 13	Clamp	Moves up the clamper to free the disc.
	r 12	Swing	Causes the slide mechanism to swing by 30 degrees and go to the player on which the disc to be returned is located.
	r 11	Slide	Extends the arm from the home position.
	r 10	Chuck	Chucks the disc.
	r 09	Slide	Folds the arm to the home position.
	r 08	Swing	Swings back to the center.
	Vertical address	Vertical movement	Moves vertically to the return address.
	r 06	Swing	Swings by 30 degrees and goes to the rack of the return address.
	r 05	Slide	Extends the arm.
	r 04	Chuck	Releases the disc.
	r 03	Slide	Extracts the arm to the home position.
	r 02	Swing	Swings back to the center.
	Vertical address	Vertical movement	Moves the carriage base vertically.
	- 0P	Slide	Moves the arm from the home position to the disc eject position.

* When the submode (+) or (-) key is pressed in the steps marked with an asterisk, the slider moves between the home position and a position before the disc eject position (front).

Note : When the error is not occured, changer can not enter the service mode before initialization is completed.

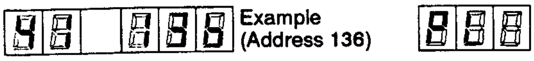
4.4 Manual Mode

Each mechanism can be moved individually.
The operation proceeds while a key is being pressed and halts in progress when the key is released.

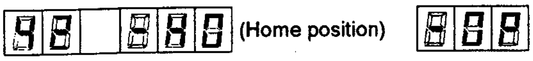
(On-the-way display) 

However, the motor is forcibly stopped if tripping of the stop switch is detected.
The abbreviations which appear in the display show the positions of the mechanisms. While the mechanism is located on the way to a certain position, the display shown above is obtained.
Note that any disc movement in Manual mode is not stored in memory.
An incorrect address may be displayed after a vertical-movement error.

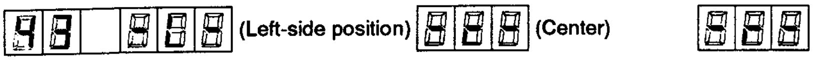
Vertical movement Pressing the S1 key moves the carriage base up and pressing the S2 key moves it down. The display shows the current address of a left-side stocker. The upper block of the player is indicated by L ∗ .

(Display)


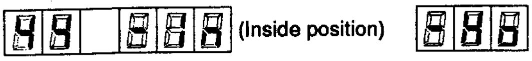
Disc table Pressing the S1 key moves the slide mechanism to the home position and pressing the S2 key moves it towards the front (opens it).

(Display)


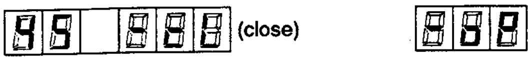
Swing Pressing the S1 key moves the swing mechanism to the right and pressing the S2 key moves it to the left.

(Display)


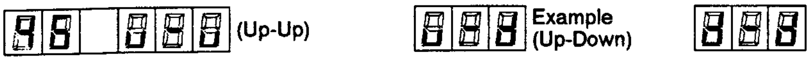
Slide Pressing the S1 key advances the slide mechanism (toward the back) and pressing the S2 key returns it (to the home position).

(Display)


Chuck Pressing the S1 key closes the chuck mechanism and pressing the S2 key opens it.

(Display)


Clamp Pressing the S1 key moves the clamper clockwise and pressing the S2 key moves it counterclockwise.

(Display)


4.5 Moving Disc Indication Mode

The number of the disc which is located on the carriage base, in Player 1 or in Player 2 is displayed.
" F F F " is shown for a disc which cannot be returned (such as a disc to be replaced with another disc).
While a key is being pressed and held, the number of the disc in the position specified by the key will be displayed.

Note : When the error is not occured, changer can not enter the service mode before initialization is completed.

4.6 Disc Replacement

Disc Replacement mode is configured according to the submode settings, as follows:

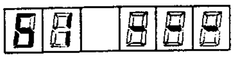
Mode		Submode	
Disc replacement	6	Replace operation	1
		Place operation	2
		Eject operation	3

Select Disc Replacement mode by pressing the Mode (+) key in Service mode.
Select Eject, Place or Replace mode by pressing the Submode keys.
When Place or Replace mode is selected, the shutter of the table automatically opens toward the front.
Then the following operations will be performed.

Note: Disc Replacement in Service mode is intended for continuous ejecting and continuous placing operations for changer aging.

- When replacing a disc

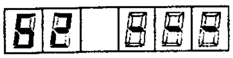
Select Submode 1 with the Submode keys.
When the S4 (Input) key is pressed, the carriage base moves back to the player position, and the shutter of the disc table opens toward the front.


(Display)

The subsequent operations are almost the same as those in Disc Change mode. But, unlike in Disc Change mode, the replace operation starts even if the door is not closed.

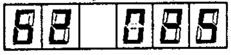
- When placing a disc

Select Submode 2 with the Submode keys.
When the S4 (Input) key is pressed, the carriage base moves back to the player position and the shutter of the disc table opens toward the front.


(Display)

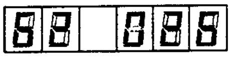
Set the disc to be placed into the tray.

Specify the target address with the S1 to S3 keys and press the Input (S4) key.
(No check is performed to see if any disc is present at the target address.)


(Display)

The disc is placed for the target address.

The carriage base moves to the player position and the shutter of the disc table opens toward the front.

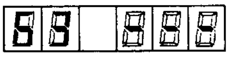

(Display)

Disc Replace mode is canceled or changes to Eject mode. (End)

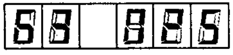
Note : No warning is given even if there is no disc on the disc tray.

- When ejecting a disc

Select Submode 3 with the Submode keys.
When the S4 (input) key is pressed, the carriage base moves back to the player position and the shutter of the disc table opens toward the front.


(Display)

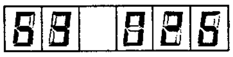
Specify the target address with the S1 to S3 keys and press the Input (S4) key.


(Display)

The disc at the target address is ejected.

The carriage base moves to the player position and the shutter of the disc table opens toward the front.

The disc is ejected.


(Display)

Disc Replace mode is canceled or changes to Eject mode. (End)

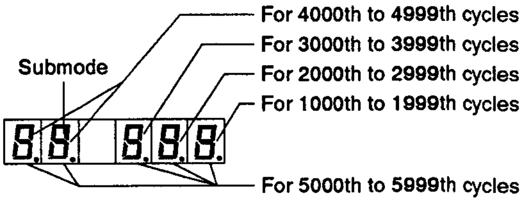
Note : No warning is given even if a disc is set in the disc tray.

4.7 Aging Mode

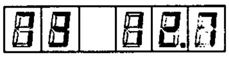
The three types of aging can be selected with the submode keys.
The S4 key starts the selected aging operation and the S3 key stops it.
During the operation, the accumulated number of operation cycles is displayed at the three least-significant digits. The 1000's value is indicated by the position of the decimal point.

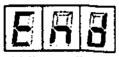
When the aging operation is completed, "E n d" is displayed using the three least-significant digit positions.

(Display)


For 4000th to 4999th cycles
For 3000th to 3999th cycles
Submode
For 2000th to 2999th cycles
For 1000th to 1999th cycles
For 5000th to 5999th cycles

(Display)

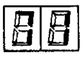

Example
(2127th cycles)


(When finished)

Note : • When an error occurs, the error code and the number of cycles blink in turn.
• When the error is not occured, changer can not enter the service mode before iinitialization is completed.

The contents of aging are as follows.

- **Submode 1**

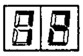
(Display) 

Use a total of eight discs at addresses 1 to 4 and 51 to 54 for aging.

The disc movement is done 2000 times while each time setting the discs.

The player is started once in 12 times of movement and plays the discs for about 1 minute each.

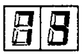
- **Submode 2**

(Display) 

Use a total of five-hundred discs at addresses 1 to 500 for aging.

All the discs are carried to the corresponding players in sequence downward from the top. Two respective players play the discs once in 12 times. The operation ends after the 1000th cycle.

- **Submode 3**

(Display) 

Use a total of eight discs set at addresses 1 to 4 and 51 to 54 for aging.

The disc movement is done for 25 hours and then finishes. The discs are carried to the players once in 12 times of movement and played for about 1 minute each.

The aging triggered by the DIP switch (Aging for delivery inspection) performs the disc movement 1000 times with the same setting and operation as those of Submode 3.

Note : When the error is not occured, changer can not enter the service mode before initialization is completed.

4.8 System Communication Monitor Mode

The data of the latest nine communications with the system (host computer) are displayed.

The data on the display can be advanced or reversed by one byte by pressing the S1 or S2 key to permit a maximum of 19 bytes to be displayed.

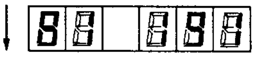
The hundreds digit of the right 3 digits indicates the sequence of the byte.

For the 10th and subsequent bytes, the decimal point lights.

A number less than 10 indicates a 1-byte datum, and the display flashes.

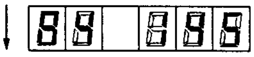
The display goes off when the power to the changer is turned off.

When System Communication Monitor mode is entered, the following display is obtained.



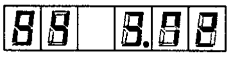
(The first byte of the latest communication is 91H.)

Use the submode keys to specify the sequence number of the communication to be referred to.



(The first byte of the fourth latest communication is 45H.)

Press the S1 or S2 key to advance or reverse the data byte.



(The 13th byte of the fourth communication is 72H.)

4.9 Player 1 Communication Monitor Mode

4.10 Player 2 Communication Monitor Mode

The data of the latest nine communications with the each player are displayed.

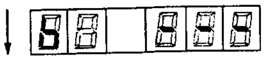
The data on the display can be advanced or reversed by one byte by pressing the S1 or S2 key.

For the display and operation, see "4.8 System Communication Monitor mode".

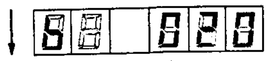
4.11 Loopback Test Mode

This mode is provided for hardware checking of the interface line with the external host computer.
The test must be performed in a condition where the RXD+ and TXD+ lines as well as the RXD − and TXD − lines of the RS-422A port are connected to each other.

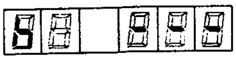
When Loopback Test mode is entered, the following display is obtained.


(before the test is started)

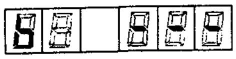
Press the S4 key to start the loopback test.
The ASCII codes , numerics and alphabetics are sent in the sequence from SPACE to DEL (HEX codes: 20h to 7Fh).
The code sent is displayed (in HEX) in the right 3 digits of the 7-segment LEDs.


(when the HEX code 20h has been sent)

When all the same codes 96 bytes as the character codes which have been sent are received, the 7-segment LED display shows the following to indicate that the test is properly completed:


(State after the proper end)

If any one of the same codes as the character codes which have been sent was not received, that code flashes in the right three digits of the 7-segment LED display, indicating the test was not properly completed:


(If HEX code 30h was not received)

If the display flashes as mentioned above, check if the interface line with the external host computer is normal or if the RXD lines and the TXD lines are connected with each other.

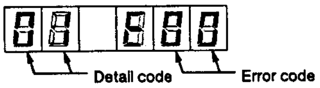
Note : When the error is not occured, changer can not enter the service mode before initialization is completed.

Table 5 Vertical address indication

Disc stocker No.	Display in a Step operation		Display in Manual mode
	Left-side stocker	Right-side stocker	
1	1 to 50	51 to 100	1 to 50
2	101 to 150	151 to 200	101 to 150
3	201 to 250	251 to 300	201 to 250
4	301 to 350	351 to 400	301 to 350
5	401 to 450	451 to 500	401 to 450
Display for the center position	L01 to L06	L01. to L06.	L01 to L06
Player position	PL1	PL2	PL
Limit switch (VADS)			

4.12 Error, Warning and Information Codes

(Display) LED display
(Flashing indication)



Note : When the error is not occured, changer can not enter the service mode before initialization is completed.

Meanings of the remarks in the tables

Error	: An error which is probably a defect, which is recorded on the error history.
Information	: A minor error possibly caused by a misoperation or a defective disc, which is recorded in the error history.
Warning	: Displayed for an incorrect operation or setting, which may not be always recorded in the error history.
Response only	: An error code to respond to the host computer, which is neither displayed nor recorded in the error history.

Table 6 Error, Warning and Information Codes

Display		Error designation	Details	Remarks
Detail code	Erro code			
01	E00	Error of receiving an error message regarding "communication errors" from a player.	The "Framing/buffer overflow" error was received from Player 1.	Error
02			The "Framing/buffer overflow" error was received from Player 2.	
01	E04	Error. A command which cannot be used is sent from the host computer to a player.	An "illegal command" for Player 1 was received.	Information
02			An "illegal command" for Player 2 was received.	
01	E06	Error. A command with no argument was sent from the host computer to a player.	A "command without argument " for Player 1 was received.	Information
02			A "command without argument " for Player 2 was received.	
01	E11	Error of receiving the error message "No disc" from a player.	Player 1 detected no disc when started.	Information
02			Player 2 detected no disc when started.	
01	E12	Error of receiving the error message "Search error" from a player.	A search error occurred at Player 1.	Information
02			A search error occurred at Player 2.	
01	E13	Error of receiving the error message "Focus error" from a player.	A focus error occurred at Player 1.	Information
02			A focus error occurred at Player 2.	
01	E14	Error of receiving the error message "Spindle error" from a player.	A spindle-lock error occurred at Player 1.	Information
02			A spindle-lock error occurred at Player 2.	
01	E20	Changer haywire error.	A mechanical error occurred.	Response only
01	E21	Door open error.	The door is open.	Warning
01	E22	Error of being initializing the mechanisms.	The initializing operation was in progress.	Response only
01	E42	Error for incomplete attachment of the disc stockers.	Dangerous, as the disc stockers had not been properly attached to the unit.	Error/warning
01	E43	Specified disc stocker not found. Access to (Music selection for) a disc was attempted for a nonexistiong disc stocker.	Disc stocker 1 not present.	Information/ Error
02			Disc stocker 2 not present.	
03			Disc stocker 3 not present.	
04			Disc stocker 4 not present.	
05			Disc stocker 5 not present.	
01	E44	Error of abnormal vertical-address sensor input.	The left-side vertical-address sensor input showed an unexpected phase.	Error
02			The right-side vertical-address sensor input showed an unexpected phase.	
01	E45	Error of abnormal vertical-motor FG input.	Determined to be dangerous, as there was no motor FG input while the carriage base was moving vertically during the initializing operation after the power was turned on.	Error
01	E46	Error. The lower-limit switch was turned on during an elevating operation.	The limit switch was turned on while the left-side vertical address sensor was active.	Error
02			The limit switch was turned on while the right-side vertical address sensor was active.	
01	E47	Error of abnormality of the lower-limit switch during initialization.	During initialization, the lower-limit switch was not turned off even when the operation to elevate the carriage base up to the player positions continued for 5 seconds.	Error
01	E71	Player status error. The expected status was not obtained within 1 minute after a command was sent.	Status error of Player 1.	Error
02			Status error of Player 2.	
01	E72	TOC-read error. TOC could not be read.	TOC-read error of Player 1.	Information (in Service mode only)
02			TOC-read error of Player 2.	

Display		Error designation	Details	Remarks
Detail code	Erro code			
01	E79	Error. The changer microcomputer detected a framing error in communication with a player.	A framing error was detected in communication with Player 1.	Error
02			A framing error was detected in communication with Player 2.	
01	E7A	Error. The changer microcomputer detected an overrun error in communication with a player.	An overrun error was detected in communication with Player 1.	Error
02			An overrun error was detected in communication with Player 2.	
01	E81	Error. No player available.	An analysis of the communication with the players showed both of the two mounted players to be inoperative.	Error
01	E82	Error. The changer microcomputer detected an overflow of the communication buffer in communication with a player.	Overflow of the reception buffer in communication with Player 1.	Error
02			Overflow of the reception buffer in communication with Player 2.	
01	E84	Error. The changer microcomputer received undefined data in communication with a player.	Undefined status/error from Player 1 was received.	Error
02			Undefined status/error from Player 2 was received.	
09	E85	Error in communication with the host computer.	Overflow of the buffer to store the received data.	Error
0C			Framing error.	
0d			Overrun error.	
01	E86	Error. Swing operation not possible.	Determined to be dangerous if a swing operation is performed (such as when a swing operation was executed while the slide mechanism is not in the home position).	Warning (in Service mode only)
01	E87	Error. Slide operation not possible.	Determined to be dangerous if a slide operation is performed (such as when a slide operation is executed while the swing mechanism is not in the right- or left-side position, when the disc table shutter is opened when the chuck mechanism is closed, or when a slide mechanism is moved toward the back with the chuck mechanism closed but holding no disc).	Error
01	E88	Player-version mismatch error.	The version of the Player 1 microcomputer did not match.	Error
02			The version of the Player 2 microcomputer did not match.	
01	E89	Error. A player did not respond.	Player 1 showed no response.	Error
02			Player 2 showed no response.	
01	E8A	Error. Clamp operation not possible.	The clamp operation was attempted when the swing mechanism was not in the center position.	Warning (in Service mode only)
01	E90	Backup memory error.	Read data were not normal in the initialization performed when the power was turned on.	Error
01	E91	Mechanical-operation timeout error.	Vertical upward movement not completed within a time limit of 20 seconds (60 seconds for the initializing operation).	Error
02			Vertical downward movement not completed within a time limit of 20 seconds (60 seconds for the initializing operation).	
03			Swing operation from the center to the left side is not completed within 3 seconds.	
04			Swing operation from the center to the right side is not completed within 3 seconds.	
05			Swing operation from the left side to the center side is not completed within 3 seconds.	
06			Swing operation from the right side to the center side is not completed within 3 seconds.	
07			Slide operation from the center to the back side is not completed within 3 seconds.	
08			Slide operation from the center to the front side is not completed within 3 seconds.	
09			Slide operation from the back to the center side is not completed within 3 seconds.	
10			Slide operation from the front to the center side is not completed within 3 seconds.	
11			Chuck-open operation not completed within the time limit of 2 seconds.	
12			Chuck-close operation not completed within the time limit of 2 seconds.	
13			Counterclockwise-clamp operation at Player 1 or 2 position not completed within the time limit of 2 seconds.	
14			Clockwise-clamp operation at Player 1 or 2 position not completed within the time limit of 2 seconds.	
01	E92	Error. The disc could not be grasped.	The disc could not be ejected from Player 1.	Error
02			The disc could not be ejected from Player 2.	
05			The disc could not be ejected from Disc stocker 1.	Information
06			The disc could not be ejected from Disc stocker 2.	
07			The disc could not be ejected from Disc stocker 3.	
08			The disc could not be ejected from Disc stocker 4.	
09			The disc could not be ejected from Disc stocker 5.	

Display		Error designation	Details	Remarks
Detail code	Erro code			
01	E93	Error. The address to which a disc is to be returned was lost.	Return address of the disc ejected from Player 1 not known.	Error
02			Return address of the disc ejected from Player 2 not known.	
05			Return address of the disc on the carriage base not known.	
01	E94	Vertical-operation lock error.	Motor overload was detected in a vertical upward movement.	Error
02			Motor overload was detected in a vertical downward movement.	
01	E96	Error of receiving as the error message "Start-up operation cannot be performed" from a player.	"Start-up operation cannot be performed" was sent from Player 1.	Information
02			"Start-up operation cannot be performed" was sent from Player 2.	
01	E98	Error. The disc on the carriage base could not be set. Even though an attempt was made to set a disc on the carriage base to a player or disc stocker, the disc was detected when the slider returned to the center.	The disc could not be set into Player 1.	Error
02			The disc could not be set into Player 2.	
05			The disc could not be set into Disc stocker 1.	
06			The disc could not be set into Disc stocker 2.	
07			The disc could not be set into Disc stocker 3.	
08			The disc could not be set into Disc stocker 4.	
09			The disc could not be set into Disc stocker 5.	
01	E99	Error of receiving the error message "Player haywire" from a player.	An unrecoverable error occurred in Player 1.	Information
02			An unrecoverable error occurred in Player 2.	

- Supplement to Error/Information/Warning codes

(1) The error codes which are not recorded in the error history are the following three.
- E20 • E21 • E22

(2) E42 (Incomplete attachment of the disc stockers) applies to the following two cases:
- The infrared sensor input stopped because of a defect while music selection was enabled. An error indication will be obtained but no record will be left in the error history if it occurs before the elevating movement of the carriage base base.
- The power to the CAC-V5000 was turned on or the elevating operation of the carriage base was attempted in a defective condition (as mentioned above), in a condition where the disc stocker was floating, or in a condition where the shipping plate was inserted into the disc stocker. For errors of this case, an error indication is obtained and the error is recorded in the error history.

(3) E43 (Specified disc stocker not found) applies to the following two case:
- The code is displayed if the error is detected when picking a disc from a disc stocker in Music Selection mode, which goes off and an operation starts when a new command is received.
- The code is displayed if the error is detected when returning a disc from a player to a disc stocker after finishing playback of the specified music. In this case, no operation is executed even if a new command (other than a reset command) is received.

In both cases, the error is recorded in the error history.

(4) E92 (Disc not grasped) applies to the following two cases:
- If the disc cannot be ejected from Player 1/2, no operation is executed even when a new command is subsequently received.
  In addition, initialization of the mechanism is not performed even if a reset command is received. This is because the disc may have been partially protruding from the player and, if the operation is forcibly executed, a defect or crack on the disc may be created.
- If the disc cannot be taken out from a disc stocker, there is a great possibility that no disc has even been set in the stocker. The error indication is therefore turned off and an operation is executed when a new command is received.

Note : When the error is not occured, changer can not enter the service mode before initialization is completed.

4.13 Control Codes

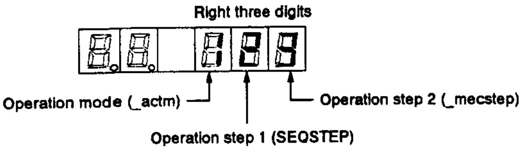
About the control codes

There are three types of control codes, as shown below, which are displayed in Error History Reference mode in the right three digits of the 7-segment LED display section.

1) Operating mode :
   Rough control codes for the changer operations
2) Operating step 1 :
   Moderate control codes for the changer operations
3) Operating step 2 :
   Detailed control codes for the changer operations

Display method

7-segment LED display section



About the operating modes

There are eight operating modes, as shown below.

Table 7 Operating mode

Right-three-digit LED display	Code	Operating mode (_actm)
Operation mode Step 1 Step 2		
0 8. 8.	0	Music Selection (Disc Set/Disc Return) mode
1 8. 8.	1	Disc Change mode
4 8. 8.	4	Service mode
5 8. 8.	5	Carriage base Initializing mode
6 8. 8.	6	ALL Disc Return/Power Failure Recovery mode
7 8. 8.	7	Operation Setting mode after completing ALL Disc Return/Power Failure Recovery
8 8. 8.	8	Aging mode in the manufacturing process (depending on the DIP-switch settings in the operation-key section)
9 8. 8.	9	Aging mode with the normal elevating speed

Note : The displayed " 8. " above can be any value.

Operating steps

Operating steps 1 and 2 indicate the steps of controlling the changer operation in each of the above operating modes. When the operating modes change, the meanings of the control steps also change.

Note : When the error is not occured, changer can not enter the service mode before initialization is completed.

The meanings of Operating steps 1 and 2 in each operating mode are shown below.

Table 8 Operating step 2 for a disc-set operation in Music Selection mode (Operating mode = 0)
(Operation step 1 in Music Selection mode is always 0.)

Right-three-digit LED display	Code	Meanings of Operation step 2 (_mecstep)
Operation mode Step 1 Step 2		
0 0 0	0	Moves the carriage base to the player position if it is located at a position lower than the player.
0 0 1	1	Checks the specified player and specified disc number.
0 0 2	2	Moves the carriage base to the disc stocker position of the specified address.
0 0 3	3	Opens the chuck mechanism.
0 0 4	4	Swings (towards the right/left)
0 0 5	5	Moves the slider towards the back.
0 0 6	6	Grasps a disc.
0 0 7	7	Temporarily sets the disc No. of the disc on the carriage base.
0 0 8	8	Returns the slider to the center.
0 0 9	9	Checks the disc-detection switch on the carriage base and fixes the disc No. of the disc on the carriage base.
0 0 A	10	Returns the swing mechanism to the center.
0 0 b	11	Confirms the disc No. of the disc on the carriage base.
0 0 C	12	Moves the carriage base to the position of the specified player.
0 0 d	13	Confirms the disc No. of the disc on the carriage base.
0 0 E	14	Swings (towards the right/left).
0 0 F	15	Moves the slider towards the back.
0 0 0.	16	Releases the disc.
0 0 1.	17	Temporarily sets the disc No. of the disc in the player.
0 0 2.	18	Returns the slider to the center.
0 0 3.	19	Checks the disc-detection switch on the carriage base and fixes the disc No. of the disc in the player.
0 0 4.	20	Returns the swing mechanism to the center.
0 0 5.	21	Confirms the disc No. of the disc on the carriage base.
0 0 6.	22	Moves down the clamper on the side (right/left) of the specified player.
0 0 7.	23	Performs the final process of the disc-set operation.

Note : When the error is not occured, changer can not enter the service mode before initialization is completed.

Table 9 Operating step 2 for a disc-return operation in Music Selection mode (Operating mode = 0)
(Operation step 1 in Music Selection mode is always 0.)

Right-three-digit LED display	Code	Meanings of Operation step 2 (_mecstep)
Operation mode Step 1 Step 2		
0 0 0	0	Moves the carriage base to the player position if it is located at a position lower than the players.
0 0 1	1	Checks if there is a disc in the specified player.
0 0 2	2	Moves the carriage base to the position of the specified player.
0 0 3	3	Moves up the clamper on the side (right/left) of the specified player.
0 0 4	4	Increments the number of played music at Players 1/2/3/4.
0 0 5	5	Opens the chuck mechanism.
0 0 6	6	Swings (towards the right/left).
0 0 7	7	Moves the slider towards the back.
0 0 8	8	Grasps a disc.
0 0 9	9	Temporarily sets the disc No. of the disc on the carriage base.
0 0 A	10	Returns the slider to the center.
0 0 b	11	Checks the disc-detection switch on the carriage base and fixes the disc No. of the disc on the carriage base.
0 0 C	12	Returns the swing mechanism to the center.
0 0 d	13	Confirms the disc No. of the disc on the carriage base.
0 0 E	14	Moves the carriage base to the position of the disc stocker specified by the disc No. of the disc on the carriage base.
0 0 F	15	Swings (towards the right/left)
0 0 0.	16	Moves the slider towards the back.
0 0 1.	17	Releases the disc.
0 0 2.	18	Clears the disc No. of the disc on the carriage base.
0 0 3.	19	Returns the slider to the center.
0 0 4.	20	Checks the disc-detection switch on the carriage base and fixes the disc No. on the carriage base.
0 0 5.	21	Returns the swing mechanism to the center.
0 0 6.	22	Confirms the disc No. of the disc on the carriage base.
0 0 7.	23	Sets "Step operation 2←24," and advances the step to #24.
0 0 8.	24	(No corresponding operation)
0 0 9.	25	Performs the final process of the disc-return operation.

Note : When the error is not occured, changer can not enter the service mode before initialization is completed.

Table 10 Operation step 1 in Disc Change mode (Operating mode = 1)

Right-three-digit LED display	Code	Meanings of Operation step 1 (SEQSTEP)	Remarks
Operation mode Step 1 Step 2			
1 0 8.	0	Opens the chuck mechanism.	
1 1 8.	1	Returns the slider to the center.	
1 2 8.	2	Returns the swing mechanism to the center.	
1 3 8.	3	Checks the step.	
1 4 8.	4	Moves the carriage base to Player 1.	
1 5 8.	5	Opens the chuck mechanism.	
1 6 8.	6	Moves the slider toward the front.	
1 7 8.	7	Clears the disc No. of the disc on the carriage base.	
1 8 8.	8	Checks the start of operation.	
1 9 8.	9	Returns the slider to the center.	
1 A 8.	10	Closes the chuck mechanism.	
1 b 8.	11	Checks for the presence of a disc with the disc-detection switch on the carriage base.	
1 C 8.	12	Temporarily sets the disc on the carriage base to Player 1.	Note 1
1 d 8.	13	Sets "Target address ←Specified address" (data copy).	
1 E 8.	14	Sets the disc of the specified address in Player 2.	Note 1
1 F 8.	15	Sets "Disc No. of the disc temporarily set in Player 1 ←Specified address. "	
1 0. 8.	16	Inserts the disc temporarily set in Player 1 into the disc stocker at the specified address.	Note 2
1 1. 8.	17	Moves the carriage base to Player 2.	
1 2. 8.	18	Checks if there is a disc in Player 2.	
1 3. 8.	19	Moves the swing mechanism towards the right.	
1 4. 8.	20	Moves the slider toward the back.	
1 5. 8.	21	Grasps a disc.	
1 6. 8.	22	Sets "Disc No. of the disc on the carriage base = the disc No. of the disc in Player 2."	
1 7. 8.	23	Returns the slider to the center.	
1 8. 8.	24	Checks the disc-detection switch on the carriage base and fixes the disc No. on the carriage base.	
1 9. 8.	25	Returns the swing mechanism to the center.	
1 A. 8.	26	Confirms the disc No. of the disc on the carriage base.	
1 b. 8.	27	Sets "Step operation 1 = 5," and reverses the step.	
1 C. 8.	28	Returns the slider to the center.	

Note : The displayed " 8. " above can be any value.
Note 1 : Operation step 2 in this step depends on the meanings shown in Table 8.
Note 2 : Operation step 2 in this step depends on the meanings shown in Table 9.
Note 3 : When the error is not occured, changer can not enter the service mode before initialization is completed.

Operation steps in Service mode

Service mode has various modes as shown below. Error codes are recorded only in modes marked with an asterisk.

- Version Check mode
- Error History Reference mode
- Reference mode of the number of iterations and cumulative time of operation
- Step operation
- Manual mode
- Moving Disc Indication mode
- * Disc Replace/Place/Eject mode
- * Aging Operation mode
- System Communication Monitor mode
- Player 1 Communication Monitor mode
- Player 2 Communication Monitor mode
- Loopback Test mode
- * Continuous Test 1 mode
- * Continuous Test 2 mode
- DIP and Rotary Switch Setting Monitor mode

Table 11 Operating step 1 for disc-replace/-place/-eject operations in Service mode

Right-three-digit LED display	Code	Meanings of Operation step 1 (SEQSTEP)	Remarks
Operation mode Step 1 Step 2			
4 0 8.	0	Checks the start of operation.	
4 1 8.	1	Opens the chuck mechanism.	
4 2 8.	2	Returns the slider to the center.	
4 3 8.	3	Returns the swing mechanism to the center.	
4 4 8.	4	Moves the carriage base to the position of Player 1.	
4 5 8.	5	Moves up the clamper on the side of Player 1.	
4 6 8.	6	Moves up the clamper on the side of Player 2.	
4 7 8.	7	Moves the slider towards the front.	
4 8 8.	8	Checks the start of operation.	
4 9 8.	9	Returns the slider to the center.	
4 A 8.	10	Closes the chuck mechanism.	
4 b 8.	11	Checks for the presence of a disc on the carriage base with the disc-detection switch on the carriage base.	
4 C 8.	12	Temporarily sets the disc onto the carriage base in Player 1.	Note 1
4 d 8.	13	Sets "Target address ←Specified address" (data copy).	
4 E 8.	14	Picks up the disc of the specified address and sets it into Player 2.	Note 1
4 F 8.	15	Sets to "Disc No. of the disc temporarily set in Player 1 ←Specified address."	
4 0. 8.	16	Inserts the disc temporarily set in Player 1 into the disc stocker at the specified address.	Note 2
4 1. 8.	17	Moves the carriage base to Player 2.	
4 2. 8.	18	Checks if there is a disc in Player 2.	
4 3. 8.	19	Moves the swing mechanism towards the right.	
4 4. 8.	20	Moves the slider toward the back.	
4 5. 8.	21	Grasps a disc.	
4 6. 8.	22	Temporarily sets the disc No. of the disc on the carriage base.	
4 7. 8.	23	Returns the slider to the center.	
4 8. 8.	24	Checks the disc-detection switch on the carriage base and fixes the disc No. on the carriage base.	
4 9. 8.	25	Returns the swing mechanism to the center.	
4 A. 8.	26	Confirms the disc No. of the disc on the carriage base.	
4 b. 8.	27	Opens the chuck mechanism.	
4 C. 8.	28	Moves the slider towards the front.	
4 d. 8.	29	Clears Operation step 1.	
4 E. 8.	30	Returns the slider to the center.	
4 F. 8.	31	Increments/decrements the submodes in Service mode.	

Note : The displayed " 8. " above can be any value.
Note 1 : Operation step 2 in this step depends on the meanings shown in Table 8.
Note 2 : Operation step 2 in this step depends on the meanings shown in Table 9.
Note 3 : When the error is not occured, changer can not enter the service mode before initialization is completed.

Table 12 Operating step 1 for an aging operation in Service mode (Operation mode = 4)

Right-three-digit LED display	Code	Meanings of Operation step 1 (SEQSTEP)	Remarks
Operation mode Step 1 Step 2 4 0 8.	0	Moves the carriage base to the player position if it is located at a position lower than the players.	
4 1 8.	1	Performs the initial settings (time and cycles) for aging.	
4 2 8.	2	Sets the disc at address N calculated according to the aging cycles into Player 1 or 2.	Note 1
4 3 8.	3	Places the disc in the player into the disc stocker.	Note 2
4 4 8.	4	Starts up the player, searches for the outer periphery and sets the playback mode.	
4 5 8.	5	Waits for one minute and returns the disc from the player to the disc stocker.	Note 2
4 6 8.	6	Checks for the requirements to complete the aging operation.	
4 7 8.	7	Moves the carriage base to the position of Player 1.	
4 8 8.	8	Completes the aging operation.	

Note : The displayed " 8. " above can be any value.
Note 1 : Operation step 2 in this step depends on the meanings shown in Table 8.
Note 2 : Operation step 2 in this step depends on the meanings shown in Table 9.
Note 3 : When the error is not occured, changer can not enter the service mode before initialization is completed.

7. ADJUSTMENTS

7.1 MECHANINICAL ADJUSTMENT

1. The Following Tools are Required

- Phillips screwdriver for M3
- Phillips screwdriver for M2.6
- Flat blade screwdriver
- 2.5mm HEX driver
- 1.5mm HEX driver
- Door key

2. Preparation

1. Turn off the power.
2. Release the door lock by door key and open the door.
3. Remove four screws and remove VD cover on the carriage base.
4. Remove disc magazine (#1 to #100).
5. Turn on the power.
6. Close the door and wait for initialization is completed.
7. Open the door and enter the service mode by pressing MODE ON/OFF and SUBMODE (+) keys for three seconds. And change to the step operation mode by pressing MODE (+) key at three times.
   (Refer to section "6. SERVICE MODE".)

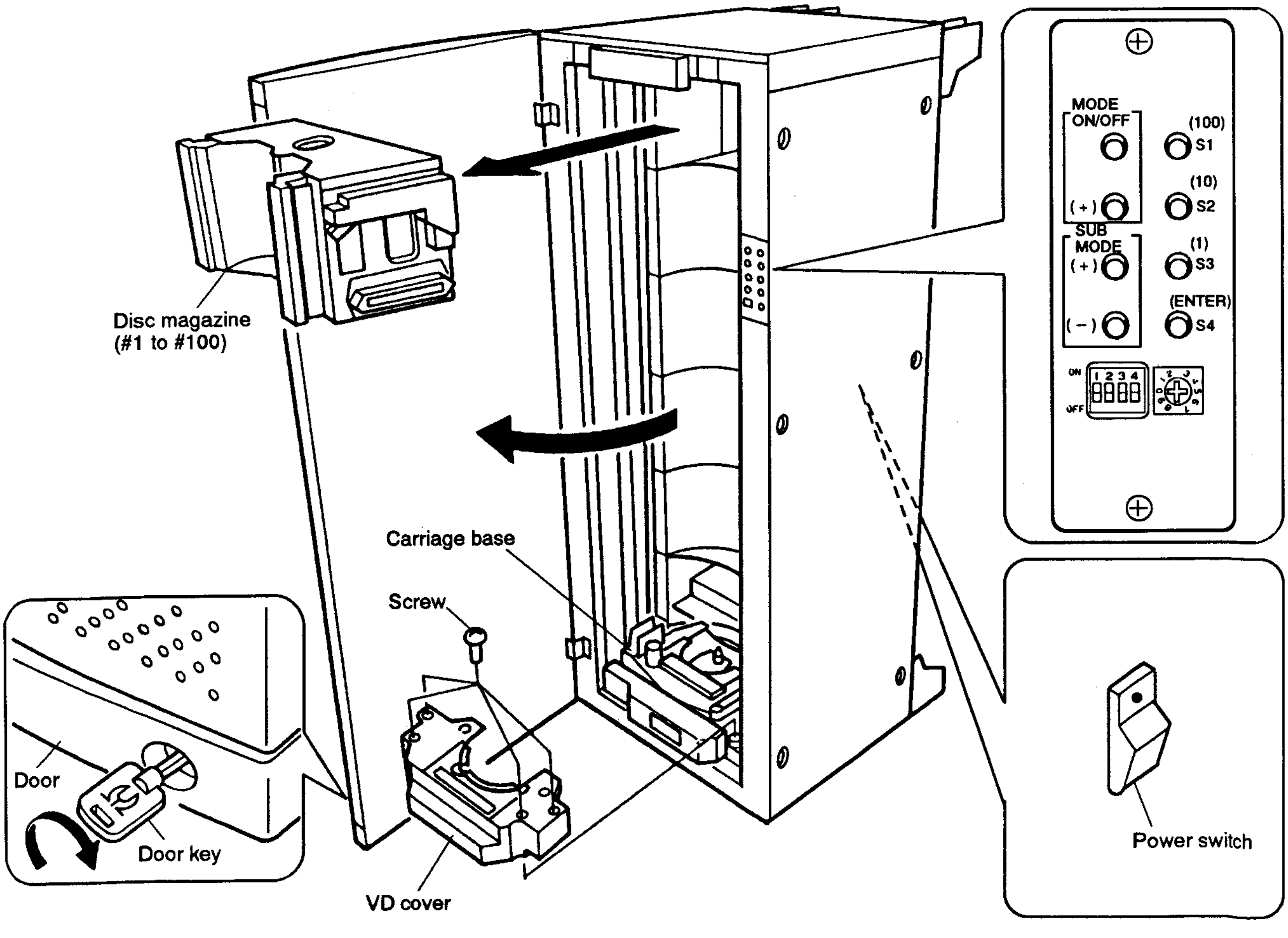

MODE ON/OFF
(+)
SUB MODE
(+)
(−)
(100) S1
(10) S2
(1) S3
(ENTER) S4
ON
1 2 3 4
OFF
Disc magazine (#1 to #100)
Carriage base
Screw
Door
Door key
VD cover
Power switch

Fig.1 Preparation of adjustment

3. Adjustment

3.1 Horizontal Adjustment of Disc Carriage Base

1. Move the carriage base to vertical address 225 by pressing S1 or S2 keys. If it cannot find correct vertical address, turn the vertical motor by finger.
2. Rotate the vertical motor by finger so that the vertical position indicator of carriage base is the same height as the reference height of disc rack (L).
3. Take a look at the reference height of disc rack (R) and make sure that height difference is within ± 0.5mm.
   If OK, proceed to 2. Encoder LVUP-LVDN relative adjustment. If not, follow the procedure as shown below.
4. Loosen the fixing screw of horizontal adjustment.
5. Rotate the adjustment screw so that the reference height of disc rack (R) becomes the same height as the vertical position indicator. Note that always finish the adjustment after rotating clockwise direction.
6. Tighen the fixing screw and apply the lock-tight.
7. Repeat step 1 to 3 and make sure the height is correct.

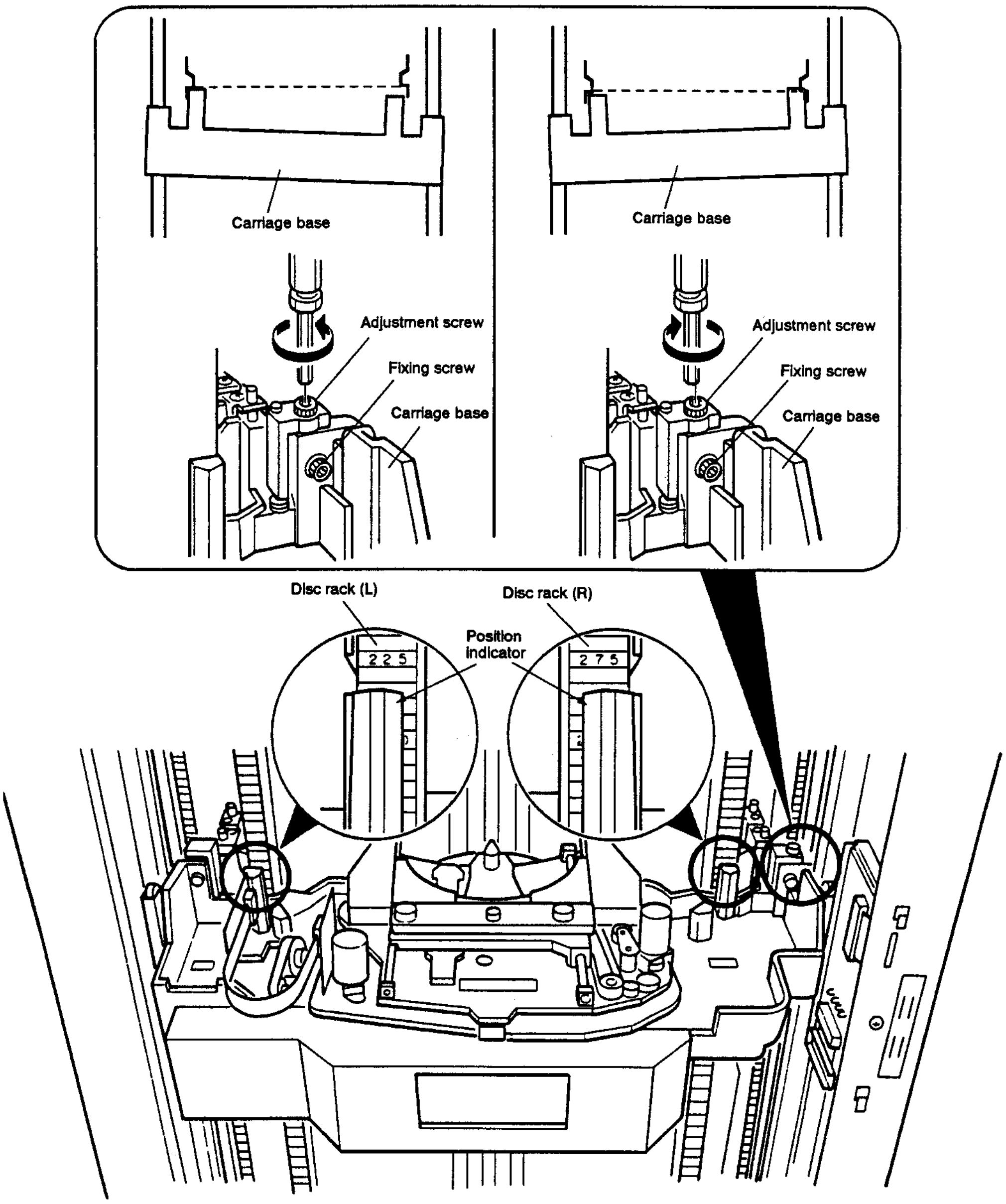

Carriage base
Carriage base
Adjustment screw
Fixing screw
Carriage base
Adjustment screw
Fixing screw
Carriage base
Disc rack (L)
Disc rack (R)
Position indicator
2 2 5
2 7 5

Fig.2 Horizontal adjustment of disc carriage base

3.2 Encoder LVUP-LVDN Relative Adjustment

1. Loosen the fixing screw.
2. Move the carriage base to vertical address 225 by pressing S1 or S2 keys. If it cannot find correct vertical address, turn the vertical motor by finger.
3. Lower the carriage base by rotating the vertical motor counterclockwise by finger until LEFT UP LED (green) is turned off. If the LED is already turned off, move the carriage base to upper position so that the LED is turned on. Then, lower it until the LED is turned off.
4. Rotate adjustment screw counterclockwise slowly until LEFT DN LED (red) is turned on. If it is already turned on, skip this step.
5. Rotate the adjustment screw clockwise slowly until LEFT DN LED is turned off.
6. Rotate the adjustment screw clockwise by 270 degrees.
7. Tighten the fixing screw.

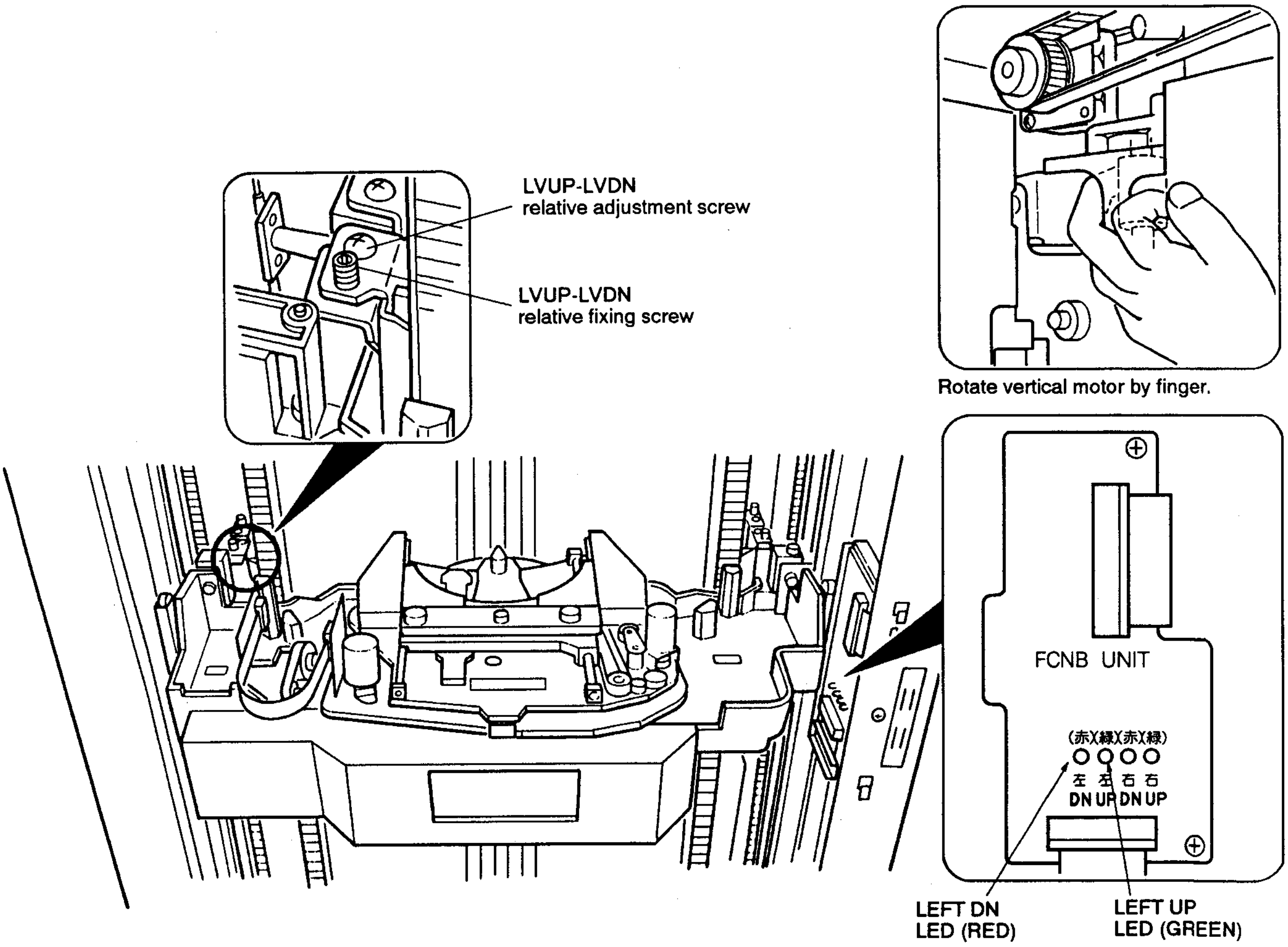

LVUP-LVDN
relative adjustment screw
LVUP-LVDN
relative fixing screw
Rotate vertical motor by finger.
FCNB UNIT
(赤)(緑)(赤)(緑)
左 左 右 右
DN UP DN UP
LEFT DN
LED (RED)
LEFT UP
LED (GREEN)

Fig.3 Encoder LVUP-LVDN relative adjustment

3.3 Height Adjustment of Encoder assy (L)

1. Move the carriage base to vertical address 225 by pressing S1 or S2 keys. If it cannot find correct vertical address, turn the vertical motor by finger.
2. Move the carriage base by rotating the vertical motor by finger until LEFT DN LED (red) is turned on. If it is already turned on, skip this step.
3. Lower the carriage base by rotating the vertical motor counterclockwise slowly by finger until LEFT DN LED (red) is turned off.
4. Take a look at the reference height of disc rack (L) and make sure that height difference is within ± 0.5mm. If OK, proceed to 4. Encoder RVUP-RVDN relative adjustment. If not, follow the procedure as shown below.
5. Loosen the fixing screw of encoder assy (L).
6. Rotate the vertical motor by finger so that the vertical position indicator of carriage base is the same height as the reference height of disc rack (L).
7. Rotate the adjustment screw of encoder assy (L) counterclockwise slowly until LEFT DN LED is turned on. If the LED is already turned on, skip this step.
8. Rotate the adjustment screw clockwise slowly until LEFT DN LED is turned off.
9. Tighten the fixing screw and apply the lock-tight.

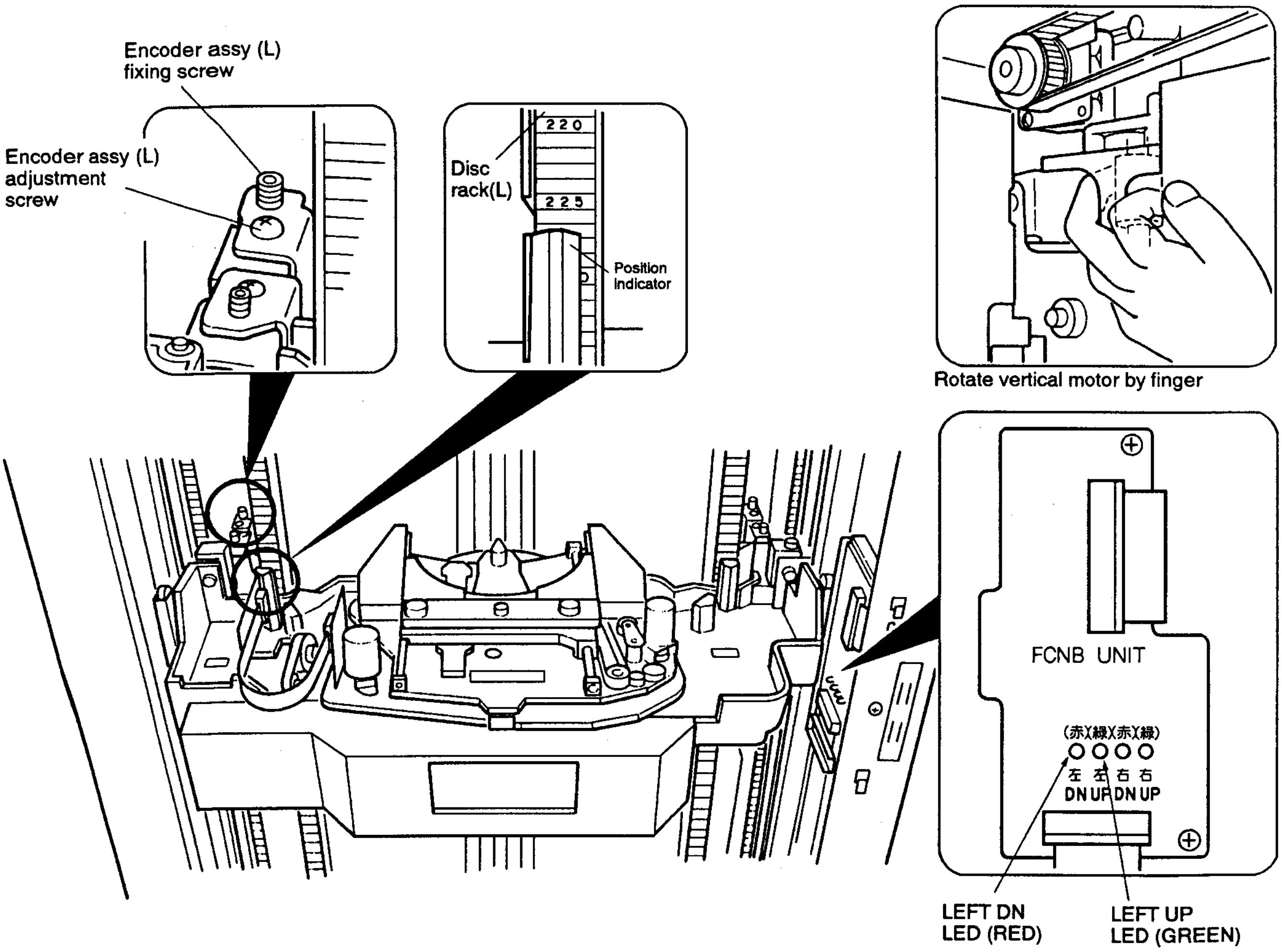

Encoder assy (L)
fixing screw
Encoder assy (L)
adjustment
screw
220
Disc
rack(L)
225
Position
indicator
Rotate vertical motor by finger
FCNB UNIT
(赤)(緑)(赤)(緑)
左 左 右 右
DN UP DN UP
LEFT DN
LED (RED)
LEFT UP
LED (GREEN)

Fig.4 Height adjustment of encoder assy (L)

3.4 Encoder RVUP-RVDN Relative Adjustment

1. Loosen the fixing screw.
2. Move the carriage base to vertical address 225 by pressing S1 or S2 keys. If it cannot find correct vertical address, turn the vertical motor by finger.
3. Lower the carriage base by rotating the vertical motor counterclockwise by finger until RIGHT UP LED (green) is turned off. If the LED is already turned off, move the carriage base to upper position so that the LED is turned on. Then, lower it until the LED is turned off.
4. Rotate adjustment screw counterclockwise slowly until RIGHT DN LED (red) is turned on. If it is already turned on, skip this step.
5. Rotate the adjustment screw clockwise slowly until RIGHT DN LED is turned off.
6. Rotate the adjustemnt screw clockwise by 270 degrees.
7. Tighten the fixing screw and apply the lock-tight.

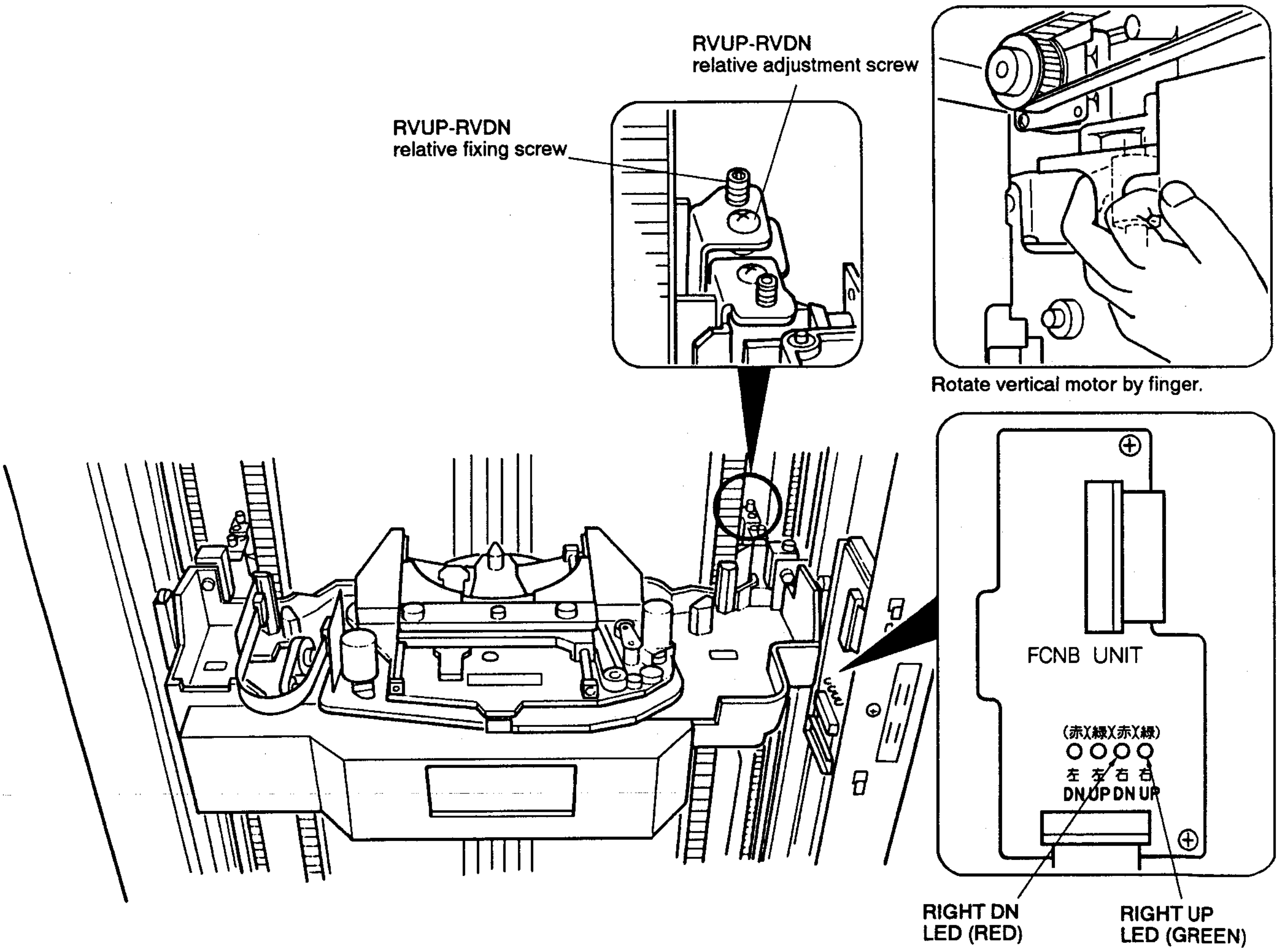
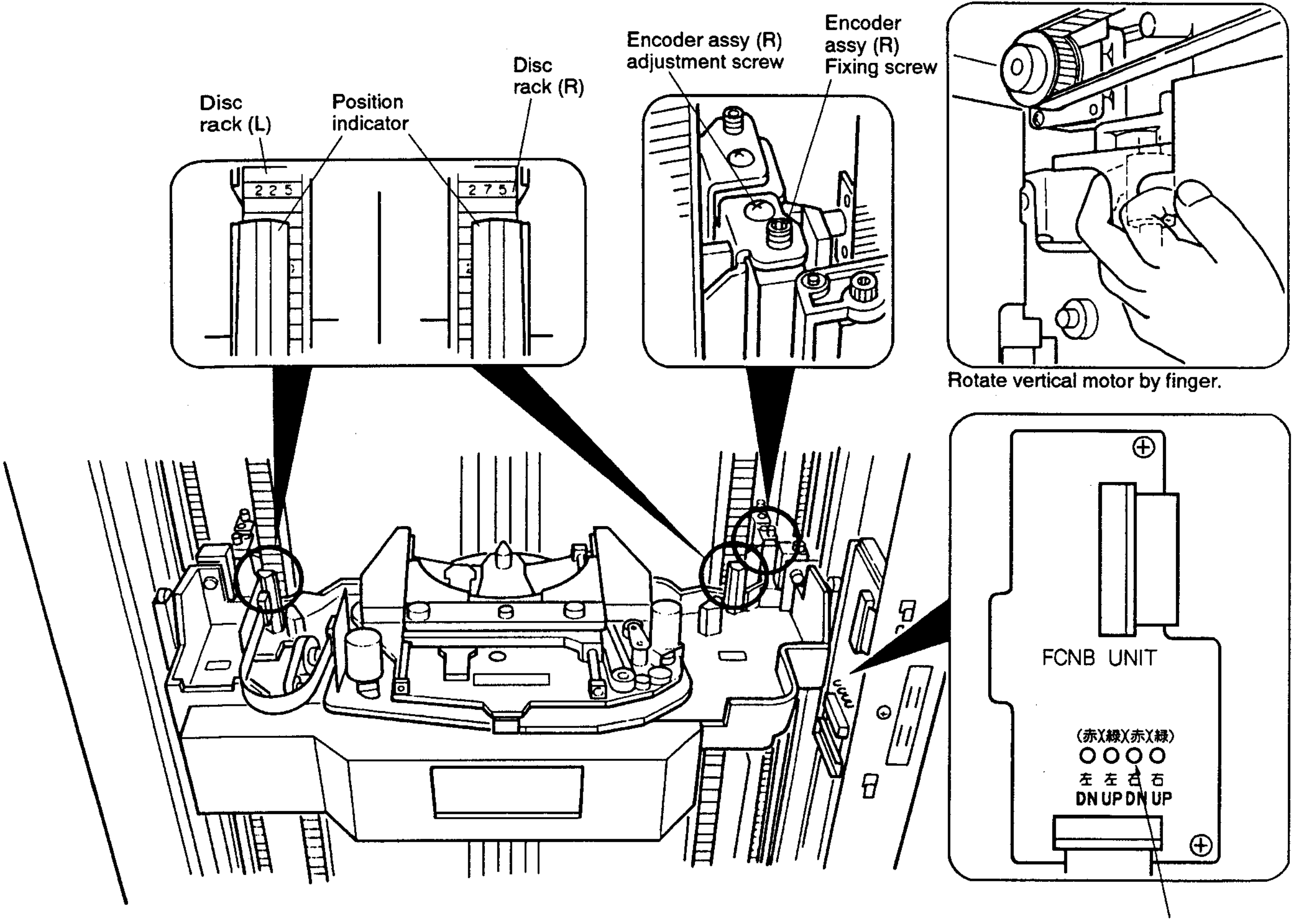

RVUP-RVDN
relative adjustment screw
RVUP-RVDN
relative fixing screw
Rotate vertical motor by finger.
FCNB UNIT
(赤)(緑)(赤)(緑)
左 左 右 右
DN UP DN UP
RIGHT DN
LED (RED)
RIGHT UP
LED (GREEN)

Fig.5 Encoder RVUP-RVDN relative adjustment

3.5 Height Adjustment of Encoder Assy (R)

1. Move the carriage base to vertical address 225 by pressing S1 or S2 keys. If it cannot find correct vertical address, turn the vertical motor by finger.
2. Move the carriage base by rotating the vertical motor clockwise by finger until RIGHT DN LED (red) is turned on. If it is already turned on, skip this step.
3. Lower the carriage base by rotating the vertical motor counterclockwise slowly by finger until RIGHT DN LED (red) is turned off.
4. Take a look at the reference height of disc rack (R) and make sure that height defference is within ± 0.5mm. If OK, proceed to 6. D guide height adjustment. If not, follow the procedure as shown below.
5. Loosen the fixing screw of encoder assy (R).
6. Rotate the vertical motor by finger so that the vertical position indicator of carriage base is the same height as the reference height of disc rack (R).
7. Rotate the adjustment screw of encoder assy (R) counterclockwise slowly until RIGHT DN LED is turned on. If the LED is already turned on, skip this step.
8. Rotate the adjustment screw clockwise slowly until RIGHT DN LED is turned off.
9. Tighten the fixing screw and apply the lock-tight.


Disc rack (L)
Position indicator
Disc rack (R)
2 2 5
2 7 5
Encoder assy (R) adjustment screw
Encoder assy (R) Fixing screw
FCNB UNIT
(赤)(緑)(赤)(緑)
左 左 右 右
DN UP DN UP
RIGHT DN LED (RED)

Rotate vertical motor by finger.

Fig.6 Height adjustment of Encoder assy (R)

3.6 D Guide (L) Height Adjustment

1. Move the carriage base to vertical address 225 by pressing S1 or S2 keys. If it is already located at 225, move to other address then back to 225.
2. Move the swing base to left position by pressing S3 key.
3. Move the D guide (L) in front of disc rack (L) by rotating the swing motor by finger as shown in the diagram.
4. Make sure that the front section of D guide (L) is located at the center of disc rack (L) groove. Make sure that the difference is within ± 0.5mm.
   If OK, proceed to 3.7 D guide (R) height Adjustment. If not, follow the procedure as shown below.
5. Rotate the adjustment screw so that the height is correct and apply the lock-tight.
6. Push S4 key to return the swing base to the center position.

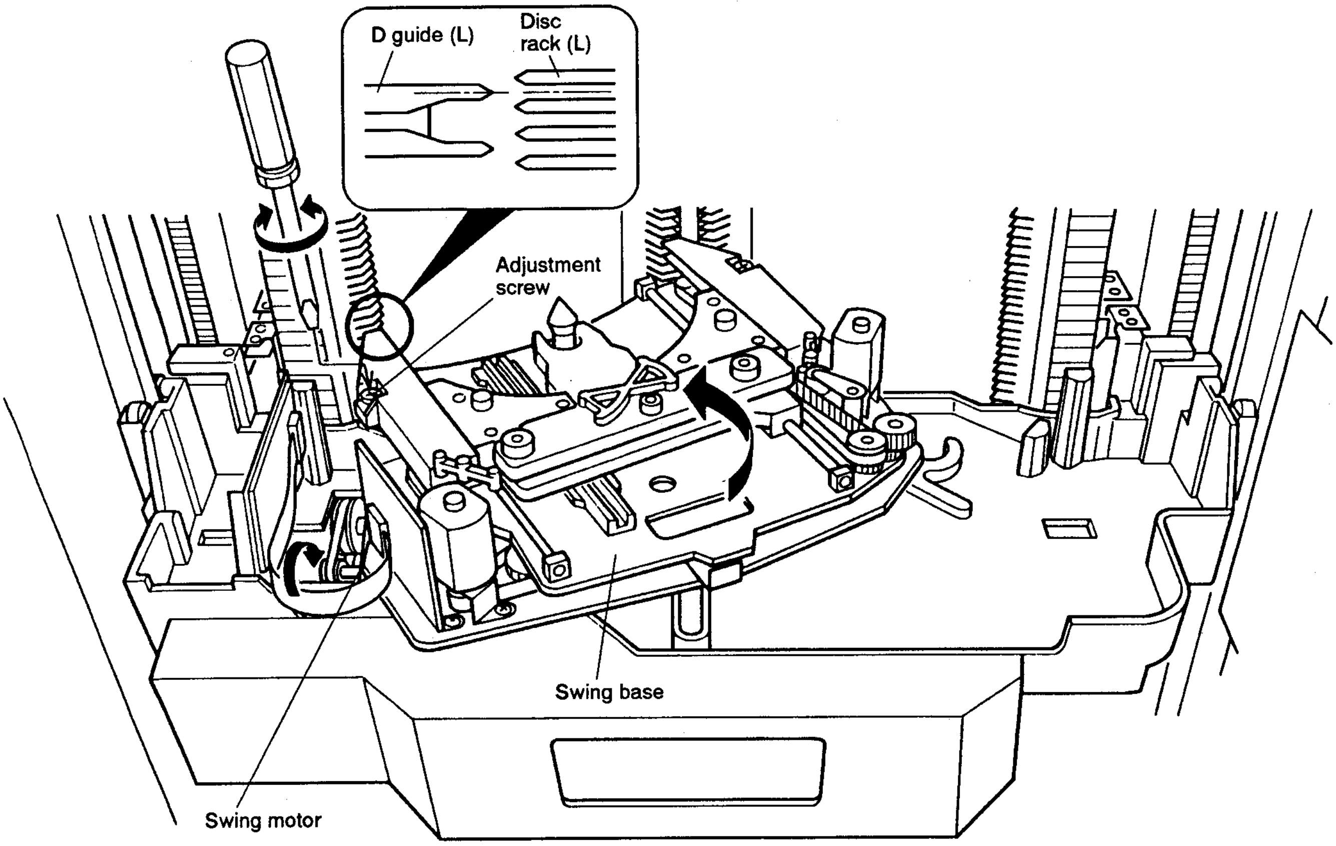


Fig.7 D guide (L) height adjustment

3.7 D Guide (R) Height Adjustment

1. Push SUB MODE (+) key to change the swing base to the right side operation. (Address indication change to the label No. of disc rack (R).)
2. Move the carriage base to vertical address 275 by pressing S1 or S2 keys. If it is already located at 275, move to other address then back to 275.
3. Move the swing base to right position by pressing S3 key.
4. Move the D guide (R) in front of disc rack (R) by rotating the swing motor by finger as shown in the diagram.
5. Make sure that the front section of D guide (R) is located at the center of disc rack (R) groove. Make sure that the difference is within ± 0.5mm. If OK, proceed to 3.8 Height check. If not, follow the procedure as shown below.
6. Rotate the adjustment screw so that the height is correct and apply the lock-tight.
7. Push S4 key to return the swing base to the center position.

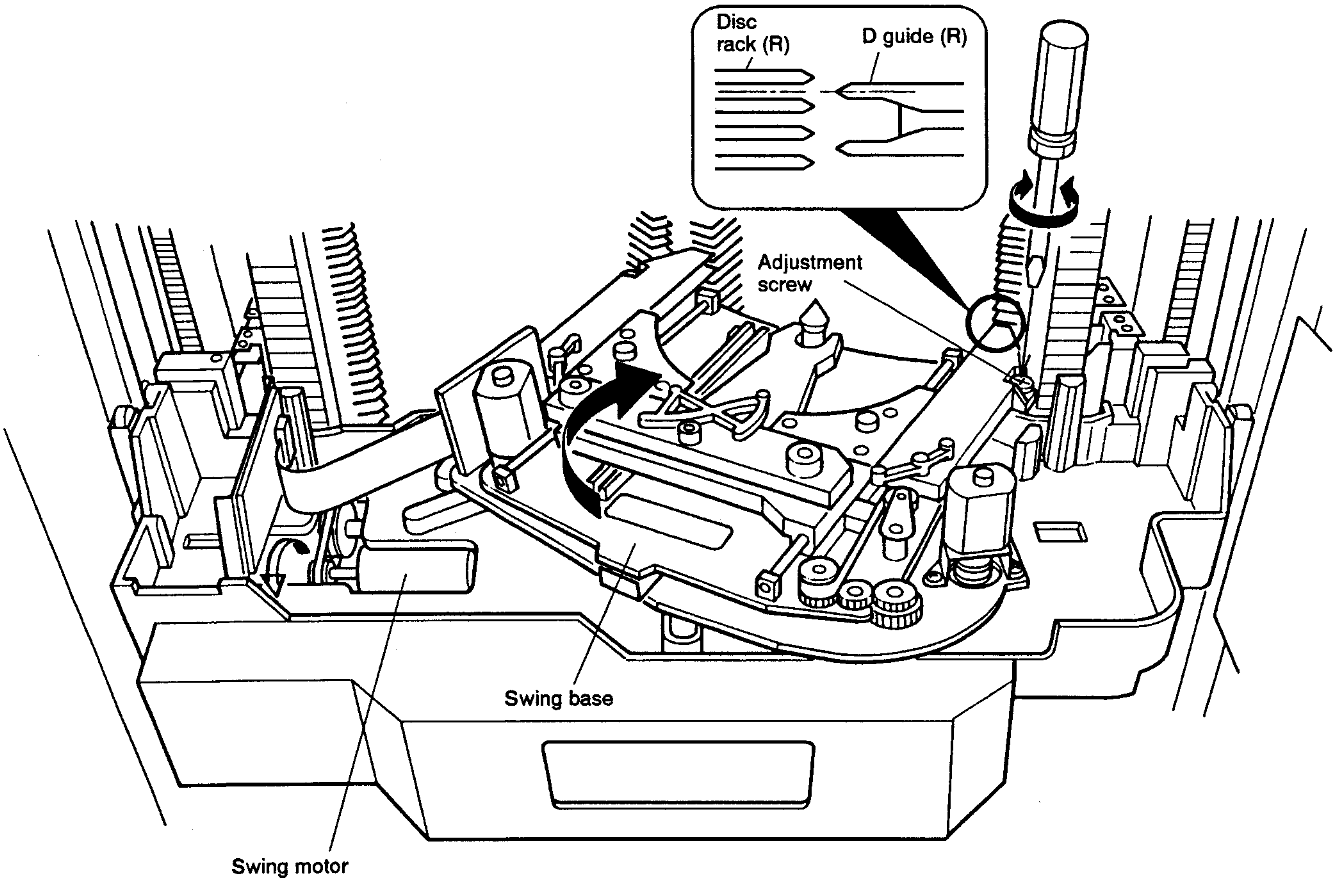


Fig.8 D guide (R) height adjustment

3.8 Height Check

1. Insert the disc stocker (#1 to #100) in top position.
2. Make sure that a disc is smoothly removed and returned at vertical address 25 and 75. Also make sure the movement at 4 drive positions.

3.9 Up and Down Count Check

1. Set to the disc change mode (refer to section "6. SERVICE MODE".) and insert the disc to address 1 and 51. At this time, make sure the count is not miscounted.

After adjustment is completed, install the VD cover, close the door and lock the door by door key.

Note : When installing the VD cover, install the VD cover while opening the VD shutter by hand.

7.2 CD PLAYER UNIT

Adjustment Methods

If a disc player is adjusted incorrectly or inadequately, it may malfunction or not work at all even though there is nothing at all wrong with the pickup or the circuitry. Adjust correctly following the adjustment procedure.

• Adjustment Items/Verification Items and Order

If the specified values cannot be obtained or no adjustment is possible by performing the verifications or adjustments described in steps 1 – 4, the pickup block may be defective.

Step	Item	Test Point	Adjustment Location
1	Focus offset verification	CN311, Pin 6 (FOER)	None
2	Tracking error balance verification	CN311, Pin 2 (TRER)	None
3	Pickup radial/tangential direction tilt adjustment	CN311, Pin 1 (RF)	Radial tilt adjustment screw, Tangential tilt adjustment screw
4	RF level verification	CN311, Pin 1 (RF)	None
5	Focus servo loop gain adjustment	CN311, Pin 5 (FOIN) CN311, Pin 6 (FOER)	VR301 (FO. GAN)
6	Tracking servo loop gain adjustment	CN311, Pin 3 (TRIN) CN311, Pin 2 (TRER)	VR302 (TR. GAN)

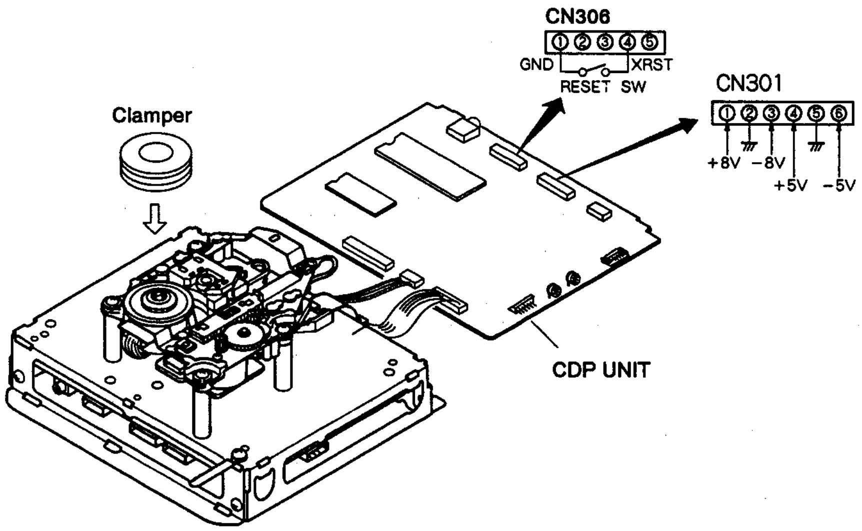
• Abbreviation table

FOER : Focus Error
TRER : Tracking Error
FO. GAN : Focus Gain
TR. GAN : Tracking Gain
FOIN : Focus In
TRIN : Tracking In

• Measuring Instruments and Tools

1. Dual trace oscilloscope (10:1 probe)
2. Low-frequency oscillator
3. Test disc (YEDS-7 or YEDS-18)
4. Low pass filter (39kΩ +0.001 μF)
5. Resistor (100 kΩ)
6. Ball point hexagonal wrench (size: 1.5mm) GGK1002
7. Standard tools

• CD Player Setting


CN306
①②③④⑤
GND
XRST
RESET SW
CN301
①②③④⑤⑥
+8V
-8V
+5V
-5V
Clamper
CDP UNIT

• Test Point and Adjustment Variable Resistor Positions

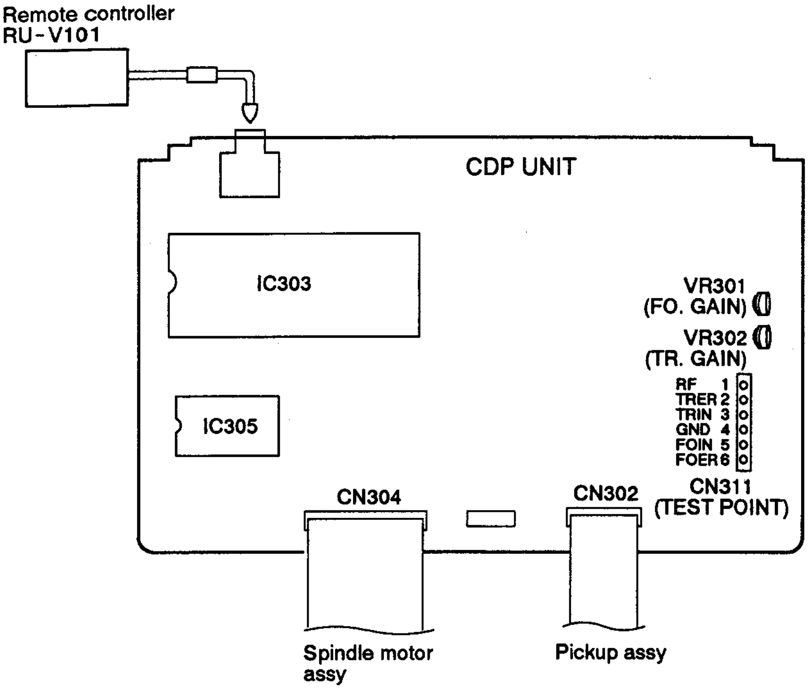

Remote controller
RU-V101
CDP UNIT
IC303
IC305
VR301
(FO. GAIN)
VR302
(TR. GAIN)
RF 1
TRER 2
TRIN 3
GND 4
FOIN 5
FOER 6
CN311
(TEST POINT)
CN304
CN302
Spindle motor assy
Pickup assy

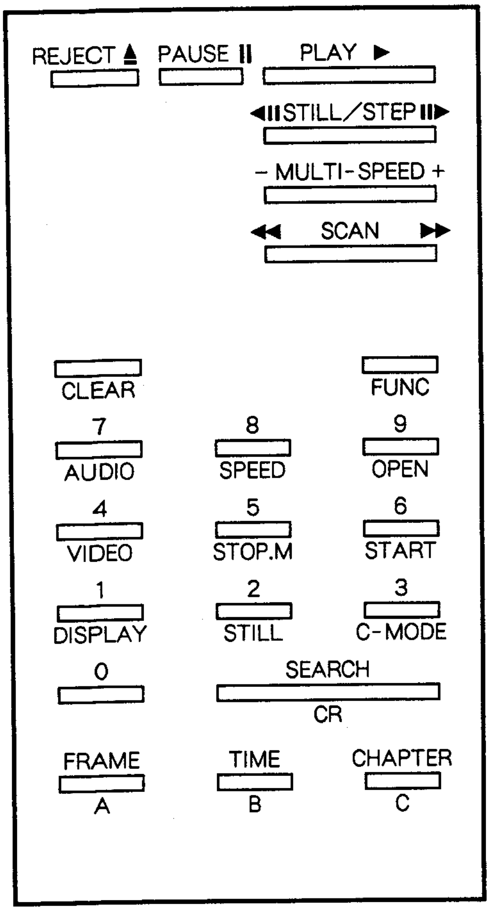
Figure 1 Adjustment point

• Notes

1. Use a 10 :1 probe for the oscilloscope.
2. All the knob positions (settings) for the oscilloscope in the adjustment procedures are for when a 10:1 probe is used.

Function Table of the Remote Controller (RU-V101) for Service

This CD player is possible to operates directly by connecting the remote controller (RU-V101).
Shows the function table of the remote controller (RU-V101) for service as follows.


REJECT ▲
PAUSE II
PLAY ▶
◀II STILL/STEP II▶
− MULTI-SPEED +
◀◀ SCAN ▶▶
CLEAR
FUNC
7
AUDIO
8
SPEED
9
OPEN
4
VIDEO
5
STOP.M
6
START
1
DISPLAY
2
STILL
3
C-MODE
0
SEARCH
CR
FRAME
A
TIME
B
CHAPTER
C

RU-V101

REJECT		: Spindle stop
PAUSE		: Pause
PLAY		: Play
STILL/STEP	II▶	: Disc select
STILL/STEP	◀II	: Disc return
MULTI-SPEED +		: Test command
MULTI-SPEED −		:
SCAN	▶▶	: Scan FWD
SCAN	◀◀	: Scan REV
CLEAR		: Clear
FRAME		: Frame set
TIME		: Time set
CHAPTER		: Track set
SEARCH		: Search
10 key		: Numerical input
DISPLAY	(FUNC + 1)	: No entry
STILL	(FUNC + 2)	: No entry
C-MODE	(FUNC + 3)	: No entry
VIDEO	(FUNC + 4)	: No entry
STOP.M	(FUNC + 5)	: Stop marker
START	(FUNC + 6)	: Start
AUDIO	(FUNC + 7)	: No entry
SPEED	(FUNC + 8)	: No entry
OPEN	(FUNC + 9)	: No entry

Test command

0 + MULTI-SPEED (+, −) keys : Laser diode (LD) ON
1 + MULTI-SPEED (+, −) keys : Focus servo close
2 + MULTI-SPEED (+, −) keys : Spindle kick
3 + MULTI-SPEED (+, −) keys : Tracking and slider servos ON
4 + MULTI-SPEED (+, −) keys : Slider FWD] When pressing the key at once, the pickup moves to
5 + MULTI-SPEED (+, −) keys : Slider REV] about half stroke in the movable limits.
6 + MULTI-SPEED (+, −) keys : Tracking and slider servos OFF
7 + MULTI-SPEED (+, −) keys :] Slider stop and
8 + MULTI-SPEED (+, −) keys :] spindle stop
9 + MULTI-SPEED (+, −) keys : Focus servo open

1. Focus Offset Verification

● Objective	Verify the DC offset for the focus error amp.		
● Symptom when out of adjustment	The model does not focus in and the RF signal is dirty.		
● Measurement instrument connections	Connect the oscilloscope to CN311, Pin 6 (FOER). [Settings] 5 mV/division 10 ms/division DC mode	● Player state	Stopped
		● Adjustment location	None
		● Disc	None needed

[Procedure]

Verify the DC voltage at CN311, Pin 6 (FOER) is − 50 ± 50 mV.

Note : If the specified values cannot be obtained or no adjustment is possible by performing the verifications or adjustments described in adjustment items 1 − 4, the pickup block may be defective.

2. Tracking Error Balance Verification

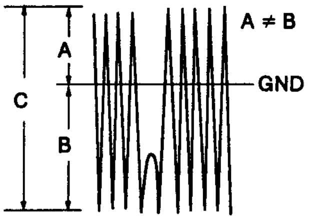
● Objective	To verify that there is no variation in the sensitivity of the tracking photo diode.		
● Symptom when out of adjustment	Play does not start or track search is impossible.		
● Measurement instrument connections	Connect the oscilloscope to CN311, Pin 2 (TRER). (This connection may be via a low pass filter.) [Settings] 50 mV/division 5 ms/division DC mode	● Player state	Focus and spindle servos closed and tracking servo open
		● Adjustment location	None
		● Disc	YEDS - 7 or YEDS - 18

[Procedure]

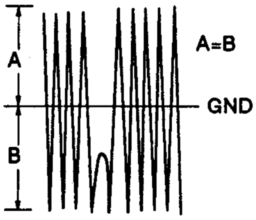
1. Move the pickup to midway across the disc (R=35 mm) with the "4 + MULTI - SPEED" key or "5 + MULTI - SPEED" key.
2. Press the "1 + MULTI - SPEED" key, then the "2 + MULTI - SPEED" key in that order to close the focus servo then the spindle servo.
3. Line up the bright line (ground) at the center of the oscilloscope screen and put the oscilloscope into DC mode.
4. Supposing that the positive amplitude of the tracking error signal at CN311, pin 2 (TRER) is (A) and the negative amplitude is (B), the following expression is satisfied.

When $A \geq B$, $\frac{1}{2} \times \frac{A-B}{C} \leq 0.1$

When $A < B$, $\frac{1}{2} \times \frac{B-A}{C} \leq 0.1$



When there is a DC component



When there is no DC component

3. Pickup Radial/Tangential Tilt Adjustment

● Objective	To adjust the angle of the pickup relative to the disc so that the laser beams are shone straight down into the disc for the best read out of the RF signals.		
● Symptom when out of adjustment	Sound broken ; some discs can be played but not others.		
● Measurement instrument connections	Connect the oscilloscope to CN311, Pin 1 (RF).	● Player state	Play
		● Adjustment location	Pickup radial tilt adjustment screw and tangential tilt adjustment screw
	[Settings] 20 mV/division 200 ns/division AC mode	● Disc	YEDS-7 or YEDS-18

[Procedure]

1. Press the "4 + MULTI-SPEED" key or "5 + MULTI-SPEED" key to move the pickup to the external circumference of the disc.
2. Press the"1 + MULTI-SPEED" key, "2 + MULTI-SPEED" key, then the "3 + MULTI-SPEED" key in that order to close the respective servos and put the player into play mode.
3. First, adjust the radial tilt adjustment screw with the hexagonal wrench so that the eye pattern (the diamond shape at the center of the RF signal) can be seen the most clearly (Figure 3).
4. Next, adjust the tangential tilt adjustment screw with the hexagonal wrench so that the eye pattern (the diamond shape at the center of the RF signal) can be seen the most clearly (Figure 3).
5. Adjust the radial tilt adjustment screw and the tangential tilt adjustment screw again so that the eye pattern can be seen the most clearly. As necessary, adjust the two screws alternately so that the eye pattern can be seen the most clearly.
6. When the adjustment is completed, lock the radial and tangential adjustment screw.

Note : Radial and tangential mean the directions relative to the disc shown in Figure 2.

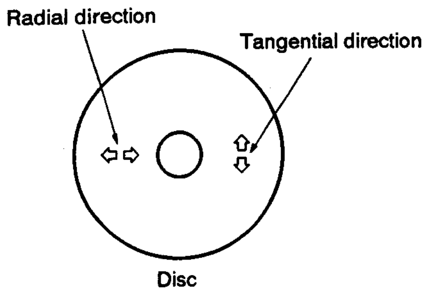
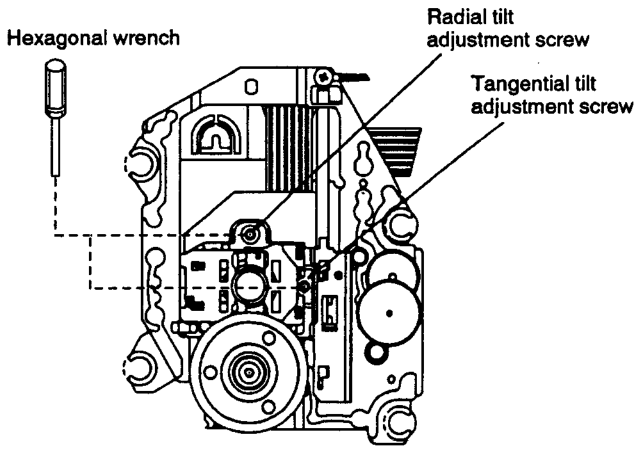


Figure 2


Hexagonal wrench
Radial tilt adjustment screw
Tangential tilt adjustment screw

Adjustment locations

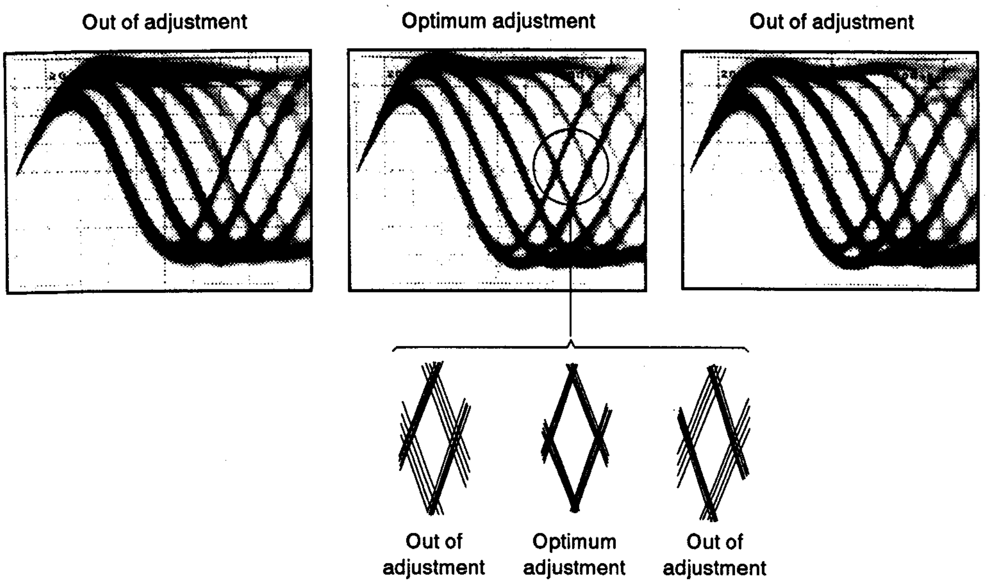

Out of adjustment
Optimum adjustment
Out of adjustment
Out of adjustment
Optimum adjustment
Out of adjustment

Figure 3. Eye pattern

4. RF Level Verification

● Objective	To verify the playback RF signal amplitude		
● Symptom when out of adjustment	No play or no search		
● Measurement instrument connections	Connect the oscilloscope to CN311, Pin 1 (RF).	● Player state	Play
		● Adjustment location	None
	[Settings] 50 mV/division 10 ms/division AC mode	● Disc	YEDS-7 or YEDS-18

[Procedure]

1. Move the pickup to midway across the disc (R=35 mm) with the "4 + MULTI-SPEED" key or "5 + MULTI-SPEED" key
2. Press the "1 + MULTI-SPEED" key, "2 + MULTI-SPEED" key, then the "3 + MULTI-SPEED" key in that order to close the respective servos and put the player into play mode.
3. Verify the RF signal amplitude is 1.2 Vp-p ± 0.2 V.

5. Focus Servo Loop Gain Adjustment

● Objective	To optimize the focus servo loop gain.
● Symptom when out of adjustment	Playback does not start or focus actuator noisy.

● Measurement instrument connections	See figure 4. [Settings] CH1 CH2 20 mV/division 5 mV/division X-Y mode	● Player state ● Adjustment location ● Disc	Play VR301(FO. GAN) YEDS-7 or YEDS-18

[Procedure]

1. Set the AF generator output to 1.2 kHz and 1 Vp-p.
2. Press the "4 + MULTI-SPEED" key or "5 + MULTI-SPEED" key to move the pickup to halfway across the disc (R=35 mm).
3. Press the "1 + MULTI-SPEED" key, "2 + MULTI-SPEED" key, then the "3 + MULTI-SPEED" key in that order to close the respective servos and put the player into play mode.
4. Adjust VR301(FO. GAN) so that the Lissajous waveform is symmetrical about the X axis and the Y axis.

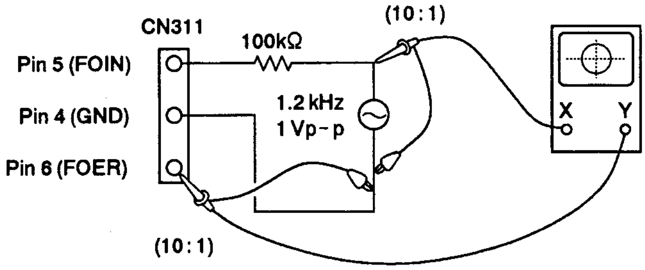
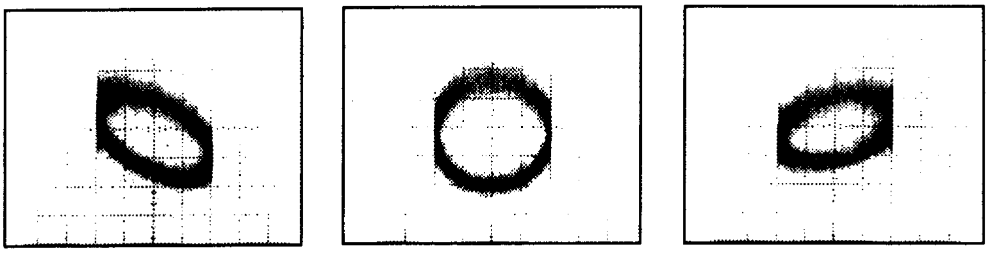


Figure 4

Focus Gain Adjustment



Higher gain Optimum gain Lower gain

6. Tracking Servo Loop Gain Adjustment

● Objective	To optimize the tracking servo loop gain.		
● Symptom when out of adjustment	Playback does not start, during searches the actuator is noisy, or tracks are skipped.		
● Measurement instrument connections	See Figure 5. [Settings] CH1 CH2 50 mV/division 20 mV/division X-Y mode	● Player state	Play
		● Adjustment location	VR302 (TR. GAN)
		● Disc	YEDS-7 or YEDS-18

[Procedure]

1. Set the AF generator output to 1.2 kHz and 2 Vp-p.
2. Press the "4 + MULTI-SPEED" key or "5 + MULTI-SPEED" key to move the pickup to halfway across the disc (R=35 mm).
3. Press the "1 + MULTI-SPEED" key, "2 + MULTI-SPEED" key, then the "3 + MULTI-SPEED" key in that order to close the respective servos and put the player into play mode.
4. Adjust VR302 (TR. GAN) so that the Lissajous waveform is symmetrical about the X axis and the Y axis.

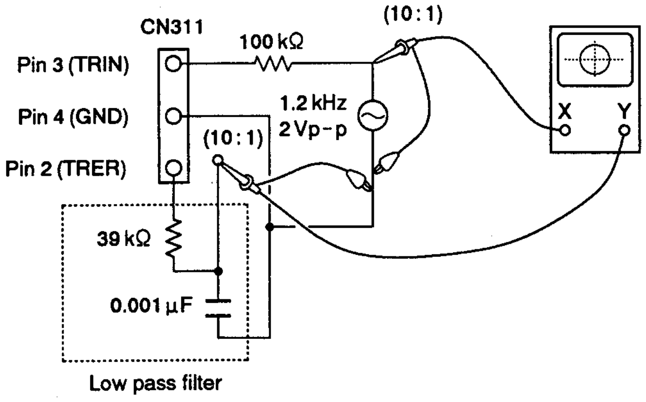
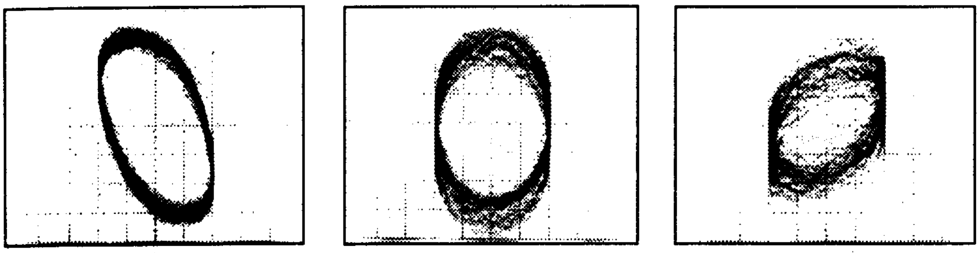


Figure 5

Tracking Gain Adjustment



Higher gain Optimum gain Lower gain

8. IC INFORMATION

- The information in the list is basic information and may not correspond exactly to that shown in the schematic diagrams.

■HD6415108F10 (CMEC UNIT : IC201)

• CHANGER MECHANISM CONTROL IC

• Pin Function

No.	Pin Name	Signal Name	I/O	Function
1	XRES	XRES	I	Microcomputer reset signal input pin
2	NM1	(GNDD)	I	Ground (Digital ground)
3	Vss	(GNDD)	I	Ground (Digital ground)
4	P10	———	I/O	Not used
5	P11			
6	P12			
7	P13			
8	P14			
9	P15			
10	P16			
11	P17			
12	D0	D0	I/O	Data bus Switch input CHS1 (CHUCK SW 1)
13	D1	D1		CHS 2 (CHUCK SW 2)
14	D2	D2		SLS 1 (SLIDE SW 1)
15	D3	D3		SLS 2 (SLIDE SW 2)
16	D4	D4		SLS 3 (SLIDE SW 3)
17	D5	D5		SWS 1 (SWING SW 1)
18	D6	D6		SWS 2 (SWING SW 2)
19	D7	D7		SWS 3 (SWING SW 3)
20	Vss	(GNDD)	I	Ground (Digital ground)
21	A0	A0	O	Address bus
22	A1	A1		
23	A2	A2		
24	A3	A3		
25	A4	A4		
26	A5	A5		
27	A6	A6		
28	A7	A7		
29	A8	A8		
30	A9	A9		
31	A10	A10		
32	A11	A11		
33	A12	A12		
34	A13	A13		
35	A14	A14		
36	A15	A15		
37	Vss	(GNDD)	I	Ground (Digital ground)
38	P20	RVUPS	I	Upper side sensor signal input of the right vertical encoder
39	P21	RVDNS	I	Lower side sensor signal input of the right vertical encoder
40	P22	LVUPS	I	Upper side sensor signal input of the left vertical encoder
41	P23	LVDNS	I	Lower side sensor signal input of the left vertical encoder
42	P24	DISC	I	Disc detection SW input
43	P25	CLS1	I	Clamp SW 1 input of the player section
44	P26	CLS2	I	Clamp SW 2 input of the player section
45	P27	CLS3	I	Clamp SW 3 input of the player section
46	Vss	(GNDD)	—	Ground (Digital ground)

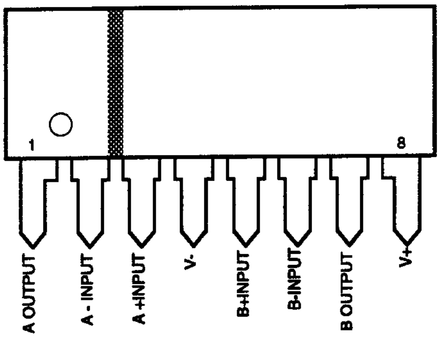
No.	Pin Name	Signal Name	I/O	Function
47	P30/WAIT	ACLS1	I	Not used
48	P31/BACK	(V+5V pull-up)	I	
49	P32/BREQ	ACLS3	I	
50	P33	R_SHIP_ON	O	LED ON/OFF control output for the rack shipping detection circuit
51	P34	SWC1	O	Swing motor control output 1
52	P35	SWC2	O	Swing motor control output 2
53	P36	VMCW	O	Vertical motor turning direction control output 1
54	P37	VMCCW	O	Vertical motor turning direction control output 1
55	Vcc	(V+5D)	—	Connect to +5V
56	P40/ADTRG	CONT1	O	Chuck motor / slide motor control output 1
57	P41/TMCI	CONT2	O	Chuck motor / slide motor control output 2
58	P42/TMRI	CONT3	O	Chuck motor / slide motor control output 3
59	P43/TMO	VMPWM	O	Vertical motor speed control output
60	P44/FTI1	VMLOCK	I	Vertical motor over current lock detection signal input
61	P45/FTCI1	VENC	I	FG signal input from the encoder section of vertical motor
62	P46/FTI2	CLC1	O	Clamp motor control output 1 of the player section
63	P47/FTCI2	CLC2	O	Clamp motor control output 2 of the player section
64	Vss	(GNDD)	I	Ground (Digital ground)
65	P50/FTOA1	RACKCS	O	Chip select output for controlling the sensor input latch IC1 (rack exist SW X5, rack shipping sensor, door SW and lower limit SW)
66	P51/FTOB1	LEDCS	O	Chip select output for controlling the 7 seg LED driver IC
67	P52/FTOA2	DIPCS	O	Chip select output for controlling the sensor input latch IC2 (SW for address setting, DIP SW)
68	P53/FTOB2	SCK/EEPSO	O	Clock signal output for controlling the IC of periphery of the microcomputer (7 seg LED driver IC, sensor input latch IC1/2 and EEPROM)
69	P54	RACKSI	I	Data input for sensor input latch IC1 (rack exist SWX5, rack shipping sensor, door SW and lower limit SW)
70	P55	LEDSO/EEPSO	O	Data output for controlling the 7 seg LED driver IC & EEPROM
71	P56	EEPCS	O	Chip select output for controlling the EEPROM
72	P57	EEPSI	I	Data input for EEPROM
73	P60	DIPSI	I	Data input for sensor input latch IC2 (SW for address setting, DIP SW)
74	P61	IFSEL1	O	Output 1 for controlling the communication path switch against CD player
75	P62	IFSEL2	O	Output 2 for controlling the communication path switch against CD player
76	P63	IND1	O	Power indicator (LED) control output
77	P64	IND2	O	Red indicator (LED) control output
78	P65	DRST	O	Reset signal output for digital attenuator IC & digital data demodulation
79	P66	XRST2	O	Reset signal output for CD player 2
80	P67	XRST1	O	Reset signal output for CD player 1
81	Vss	(GNDD)	I	Ground (Digital ground)
82	AVss	(GNDD)	I	Ground (Digital ground)
83	P70/ANO	KEY1	I	Analog key input 1 (Sub mode - , Sub mode + , S100, S10, S1)
84	P71/AN1	KEY2	I	Analog key input 2 (Mode ON/OFF, Mode +)
85	P72/AN2	PRESET	I	Mode preset input (use by checker mode)
86	P73/AN3	———	I	Non connection
87	AVcc	(V+5D)	I	Connect to +5V
88	Vcc	(V+5D)	I	Connect to +5V
89	P80/IRQ0	DE	O	Data enable output for RS422A line transceiver IC
90	P81/IRQ1	———	I/O	Non connection
91	P82/IRQ2/SCK1	———	I/O	Non connection
92	P83/IRQ3/SCK2	———	I/O	Non connection
93	P84/RXD1	RX	I	Communication data input with external controller
94	P85/TXD1	TX	O	Communication data output to external controller
95	P86/RXD2	CDPSI	I	Communication data input with CD player section
96	P87/TXD2	CDPSO	O	Communication data output to CD player section
97	Vss	(GNDD)	I	Ground (Digital ground)
98	EXTAL	EXTAL	I	Connect the crystal resonator (master clock 20MHz)
99	XTAL	XTAL	I	Connect the crystal resonator (master clock 20MHz)
100	Vss	(GNDD)	I	Ground (Digital ground)

No.	Pin Name	Signal Name	I/O	Function
101	ϕ	———	I	Non connection
102	E	———	O	Non connection
103	XAS	XAS	O	Access signal output for periphery IC
104	XRD	XRD	O	Read signal output for periphery IC (ROM, RAM)
105	XHWR	XWR	O	Write signal output for periphery IC (ROM, RAM)
106	XLWR	———	O	Non connection
107	XRFSH	———	O	Non connection
108	Vcc	(V+5D)	I	Connect to +5V
109	MD0	(V+5D)	I	CPU mode setting input 0 : connect to +5V
110	MD1	(GNDD)	I	CPU mode setting input 1 : ground (digital ground)
111	MD2	(GNDD)	I	CPU mode setting input 2 : ground (digital ground)
112	XSTBY	(V+5D)	I	Standby signal input : connect to +5V

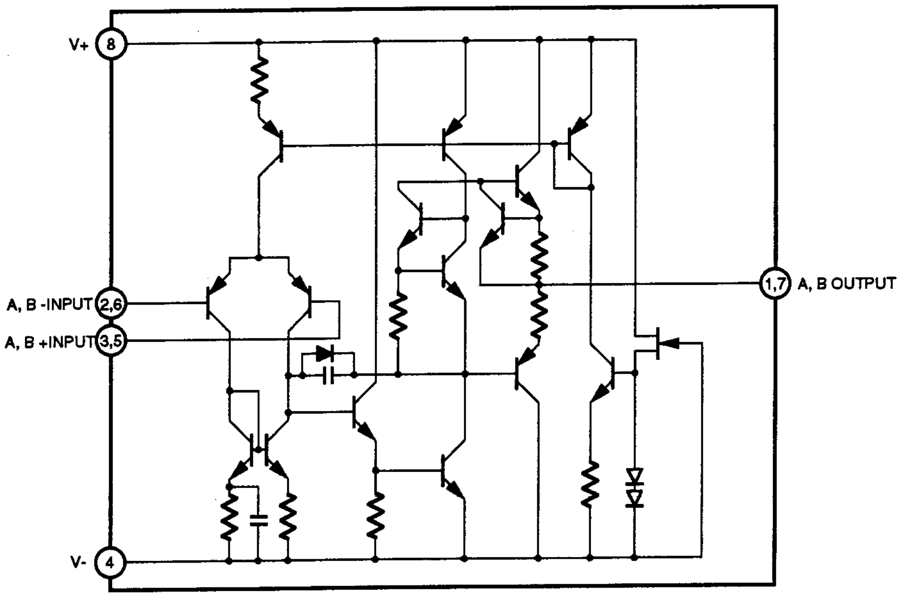
■NJM4556AL (ANLG UNIT : IC110-IC113)

•OP-AMP IC

• Pin Assignment


1
8
A OUTPUT
A - INPUT
A +INPUT
V-
B+INPUT
B-INPUT
B OUTPUT
V+

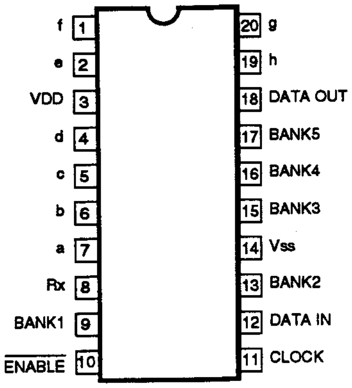
• Block Diagram


V+ 8
A, B -INPUT 2,6
A, B +INPUT 3,5
V- 4
1,7 A, B OUTPUT

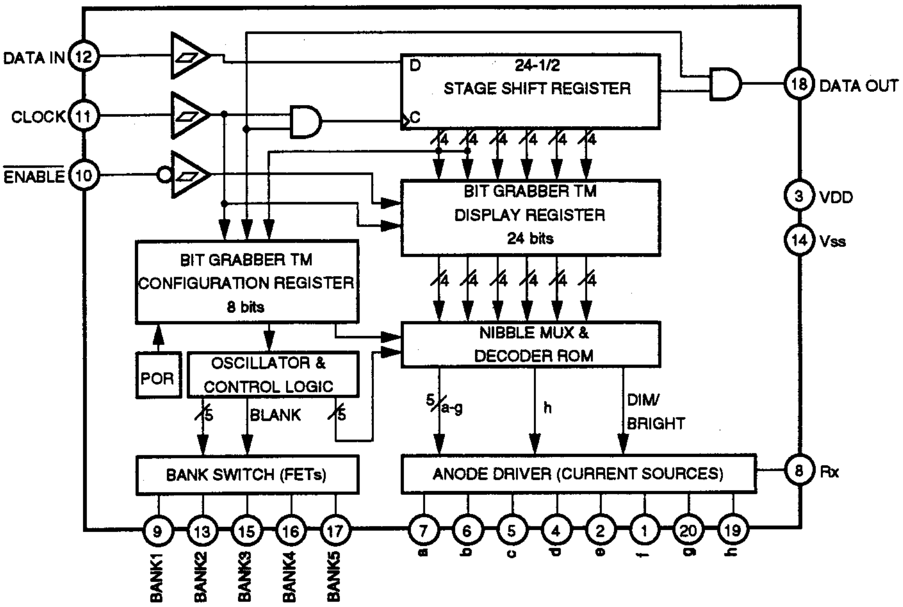
■MC14489P (LEDB UNIT : IC721)

• MULTIFUNCTION OED DISPLAY/LAMP DRIVER CMOS

• Pin Assignment


f 1
e 2
VDD 3
d 4
c 5
b 6
a 7
Rx 8
BANK1 9
ENABLE 10
20 g
19 h
18 DATA OUT
17 BANK5
16 BANK4
15 BANK3
14 Vss
13 BANK2
12 DATA IN
11 CLOCK

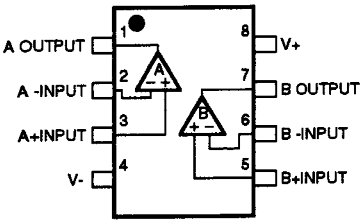
• Block Diagram


DATA IN 12
CLOCK 11
ENABLE 10
D
C
24-1/2
STAGE SHIFT REGISTER
18 DATA OUT
4
BIT GRABBER TM
DISPLAY REGISTER
24 bits
3 VDD
14 Vss
BIT GRABBER TM
CONFIGURATION REGISTER
8 bits
NIBBLE MUX &
DECODER ROM
POR
OSCILLATOR &
CONTROL LOGIC
5
BLANK
5 a-g
h
DIM/
BRIGHT
BANK SWITCH (FETs)
ANODE DRIVER (CURRENT SOURCES)
8 Rx
9
13
15
16
17
7
6
5
4
2
1
20
19
BANK1
BANK2
BANK3
BANK4
BANK5
a
b
c
d
e
f
g
h

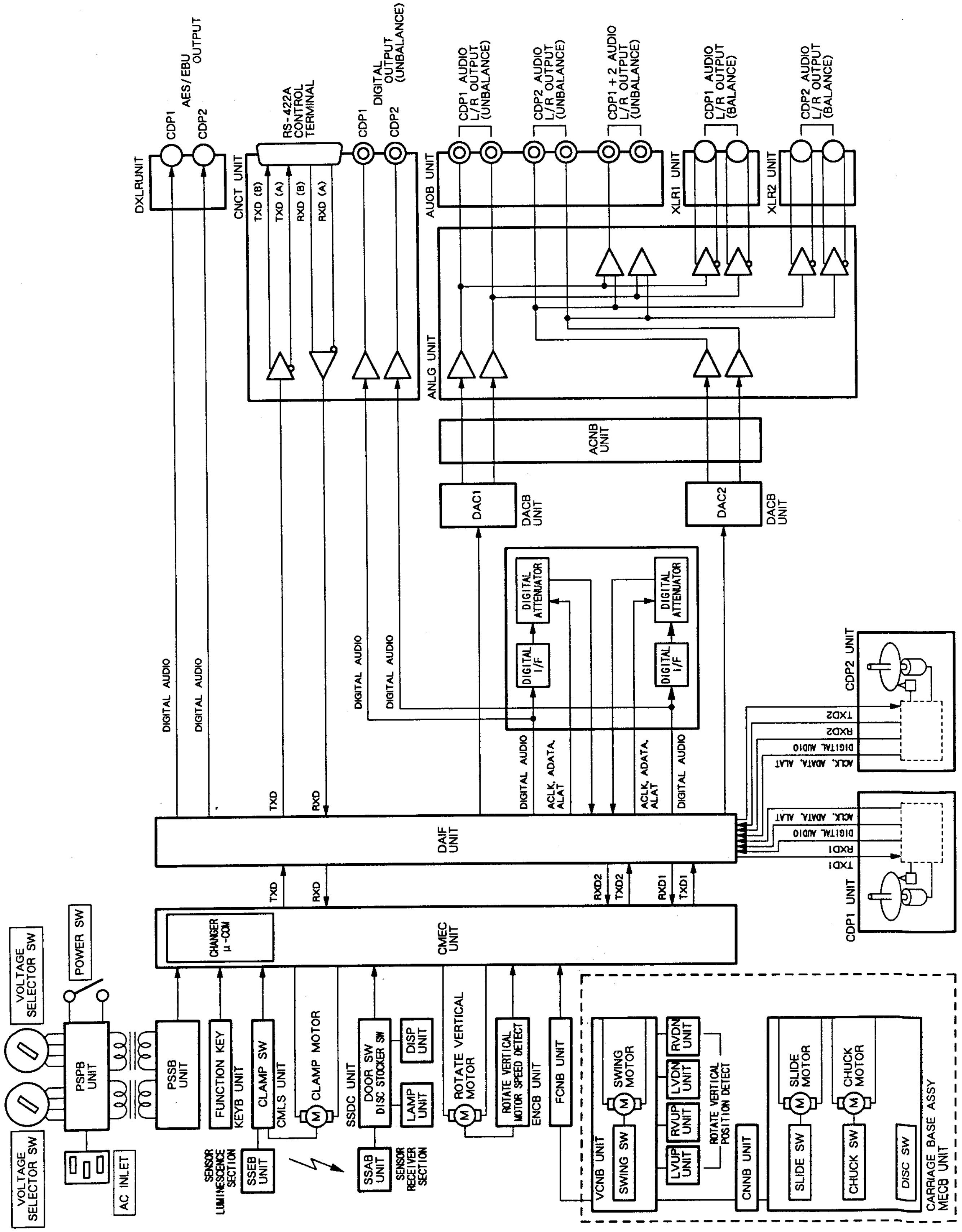
■NJM5532DD (DACB UNIT : IC554, IC555, IC615)

•OP-AMP IC

• Block Diagram (Top view)

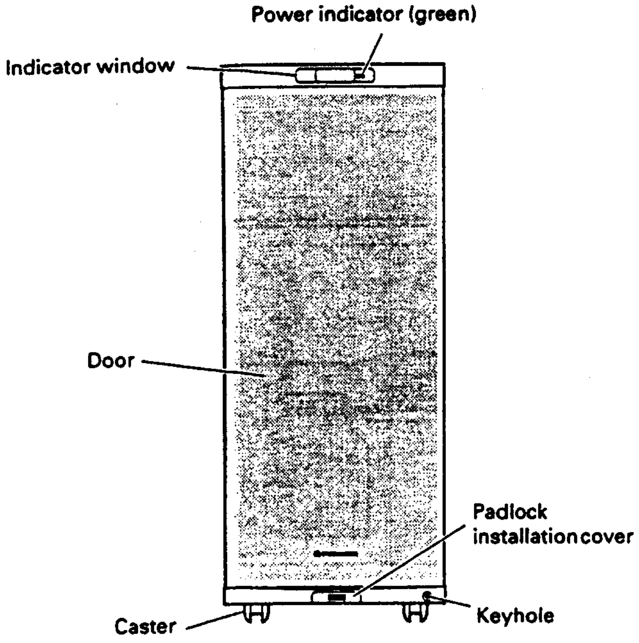

A OUTPUT
A -INPUT
A+INPUT
V-
V+
B OUTPUT
B -INPUT
B+INPUT
1
2
3
4
5
6
7
8
A
B
-
+

9. BLOCK DIAGRAM

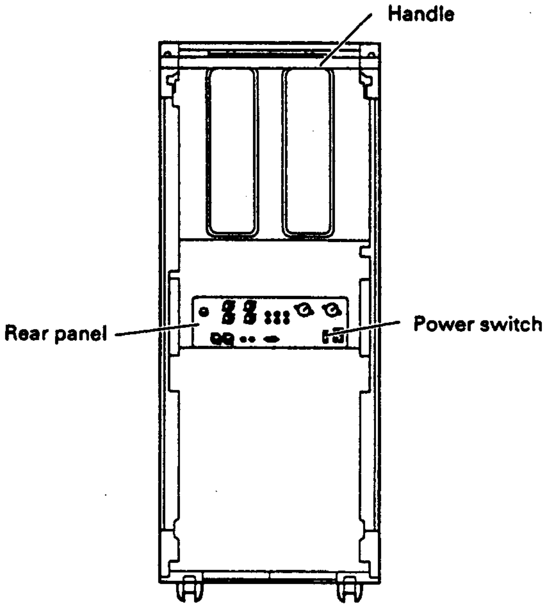

CDP1
CDP2
AES/EBU OUTPUT
DXLRUNIT
RS-422A CONTROL TERMINAL
CNCT UNIT
TXD (B)
TXD (A)
RXD (B)
RXD (A)
DIGITAL OUTPUT (UNBALANCE)
CDP1 AUDIO L/R OUTPUT (UNBALANCE)
CDP2 AUDIO L/R OUTPUT (UNBALANCE)
CDP1 + 2 AUDIO L/R OUTPUT (UNBALANCE)
CDP1 AUDIO L/R OUTPUT (BALANCE)
CDP2 AUDIO L/R OUTPUT (BALANCE)
AUOB UNIT
XLR1 UNIT
XLR2 UNIT
ANLG UNIT
ACNB UNIT
DAC1
DAC2
DACB UNIT
DIGITAL ATTENUATOR
DIGITAL I/F
DIGITAL AUDIO
ACLK, ADATA, ALAT
TXD
RXD
TXD2
RXD2
TXD1
RXD1
CDP2 UNIT
CDP1 UNIT
DAIF UNIT
CHANGER µ-COM
CMEC UNIT
VOLTAGE SELECTOR SW
POWER SW
PSPB UNIT
PSSB UNIT
AC INLET
FUNCTION KEY
KEYB UNIT
CLAMP SW
CMLS UNIT
M
CLAMP MOTOR
SSDC UNIT
DOOR SW
DISC STOCKER SW
DISP UNIT
LAMP UNIT
SENSOR LUMINESCENCE SECTION
SSEB UNIT
SSAB UNIT
SENSOR RECEIVER SECTION
ROTATE VERTICAL MOTOR
ROTATE VERTICAL MOTOR SPEED DETECT
ENCB UNIT
FCNB UNIT
SWING MOTOR
SWING SW
VCNB UNIT
RVDN UNIT
LVDN UNIT
RVUP UNIT
LVUP UNIT
ROTATE VERTICAL POSITION DETECT
CNNB UNIT
SLIDE MOTOR
CHUCK MOTOR
SLIDE SW
CHUCK SW
DISC SW
CARRIAGE BASE ASSY
MECB UNIT

10. PANEL FACILITIES

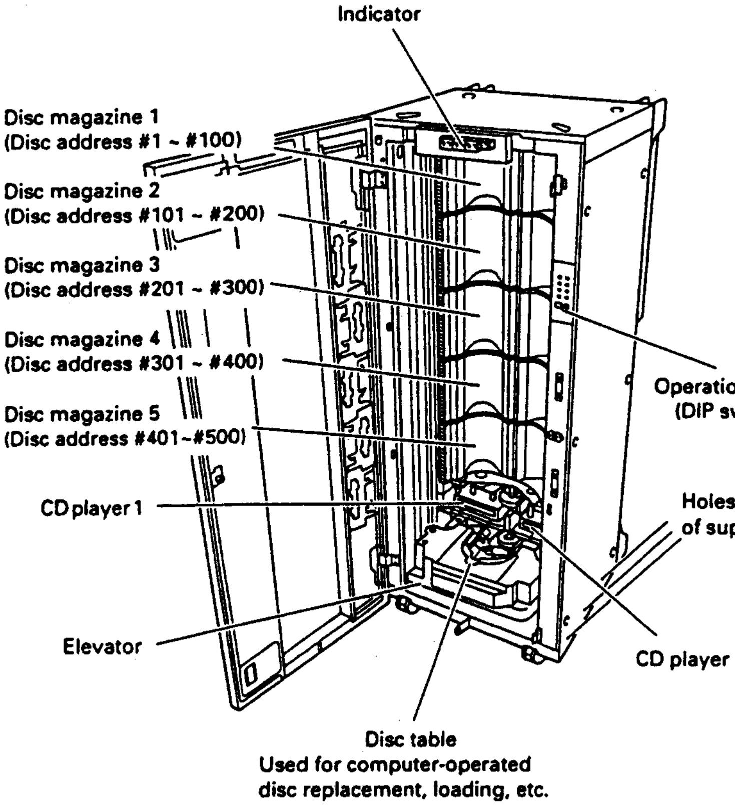
[Front Panel]


Power indicator (green)
Indicator window
Door
Padlock installation cover
Caster
Keyhole

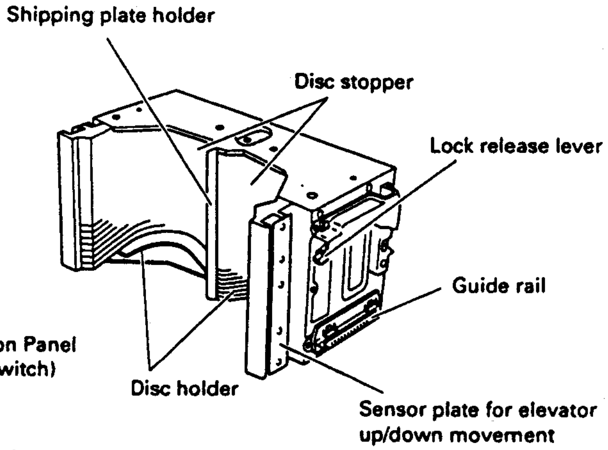
[Rear Panel]


Handle
Rear panel
Power switch

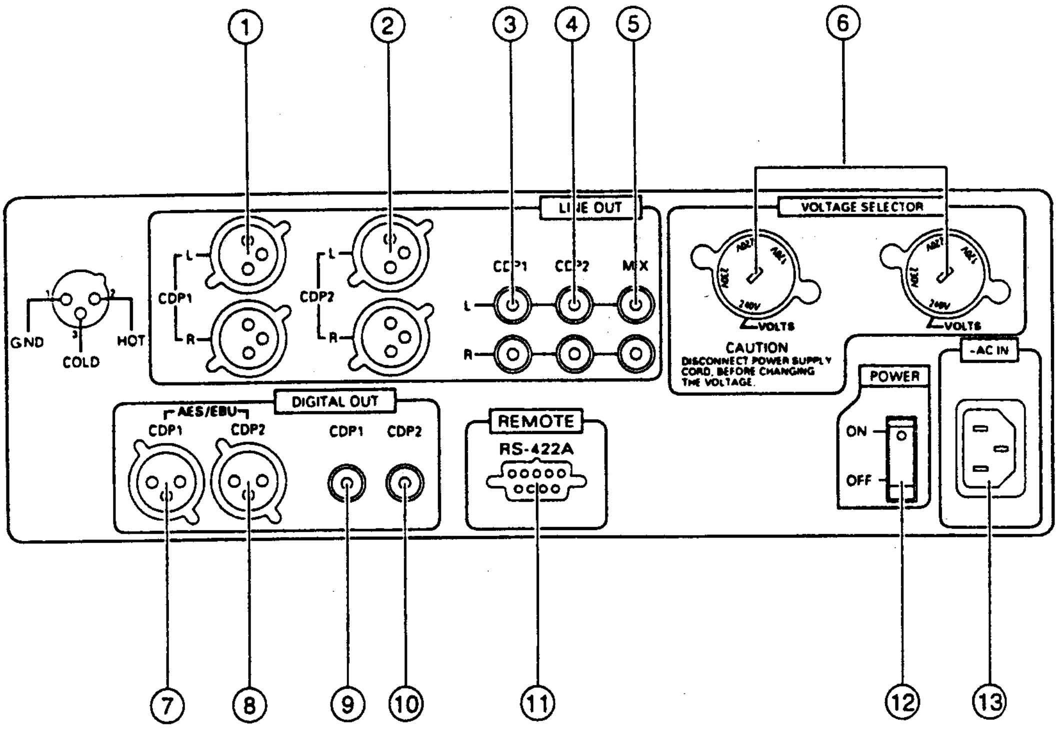
[Door fully open]


Indicator
Disc magazine 1
(Disc address #1 ~ #100)
Disc magazine 2
(Disc address #101 ~ #200)
Disc magazine 3
(Disc address #201 ~ #300)
Disc magazine 4
(Disc address #301 ~ #400)
Disc magazine 5
(Disc address #401~#500)
CD player 1
Elevator
Operation Panel
(DIP switch)
Holes for installation
of support plate
CD player 2
Disc table
Used for computer-operated
disc replacement, loading, etc.

[Disc magazine]


Shipping plate holder
Disc stopper
Lock release lever
Guide rail
Disc holder
Sensor plate for elevator
up/down movement

[Rear Panel]


①
②
③
④
⑤
⑥
LINE OUT
VOLTAGE SELECTOR
CDP1
CDP2
MIX
L
R
CDP1
CDP2
GND
HOT
COLD
1
2
3
240V
VOLTS
CAUTION
DISCONNECT POWER SUPPLY CORD, BEFORE CHANGING THE VOLTAGE.
POWER
ON
OFF
AC IN
DIGITAL OUT
AES/EBU
CDP1
CDP2
CDP1
CDP2
REMOTE
RS-422A
⑦
⑧
⑨
⑩
⑪
⑫
⑬

① **LINE OUT CDP1 jacks (XLR-3 • 32, balanced)**
Outputs analog audio signals from CD player 1.

② **LINE OUT CDP2 jacks (XLR-3 • 32, balanced)**
Outputs analog audio signals from CD player 2.

③ **LINE OUT CDP1 jacks (RCA pin-jack, unbalanced)**
Outputs analog audio signals from CD player 1.

④ **LINE OUT CDP2 jacks (RCA pin-jack, unbalanced)**
Outputs analog audio signals from CD player 2.

⑤ **LINE OUT MIX jacks (RCA pin-jack, unbalanced)**
Outputs analog signals by mixing audio signals from CD players 1 and 2.

⑥ **VOLTAGE SELECTOR switches**

⑦ **DIGITAL OUTPUT (AES/EBU) CDP1 jack (XLR-3 • 32, balanced)**
Outputs digital audio signals from CD player 1.

⑧ **DIGITAL OUTPUT (AES/EBU) CDP2 jack (XLR-3 • 32, balanced)**
Outputs digital audio signals from CD player 2.

⑨ **DIGITAL OUT CDP1 jack (RCA pin-jack, unbalanced)**
Outputs digital audio signals from CD player 1.

⑩ **DIGITAL OUT CDP2 jack (RCA pin-jack, unbalanced)**
Outputs digital audio signals from CD player 2.

⑪ **RS-422A connector**
RS-422A interface for connection to a computer or controller.

⑫ **Power switch**

⑬ **AC inlet**

11. SPECIFICATIONS

■ General

System	CD-auto changer
Disc	12 cm/5-inch CD audio disc
Power requirements	AC 120V/220V/230V/240V (switchable) 50/60 Hz
Power consumption	50 W
Weight (with disc magazine, without discs)	74.5 kg (164 lb 4 oz)
Dimensions	453 (W) x 1159 (H) x 507 (D) mm 17-27/32 (W) x 45-5/8 (H) x 19-31/32 (D) in
Operating temperature	+5°C ~ +35°C +41°F ~ +95°F
Operating humidity	5% – 90% (no condensation)
Storage temperature	–40°C ~ +60°C –40°F ~ +140°F

■ Functions

Disc storage (12 cm/5-inch discs)	500 discs
Removable disc magazines	5 magazines which hold 100 discs each can be stored.
Power switch	Power ON/OFF switch at the rear of the unit

■ Accessories

Disc magazine	5
Shipping plate	5
Door key (for front door locking)	2
Support panel	2
Support panel mounting screws	6

■ Connection terminals

Players 1 and 2 unbalanced output	
Output level	2.2 ±0.5 Vrms
Output impedance	1 kΩ or lower
Signal-to-noise ratio	110 dB
Frequency response	20 Hz to 20 kHz ±0.5 dB
Distortion	0.007% at 1 kHz
Channel separation	103 dB
Remained noise	100 µVrms or less
Level difference between right and left	1.5 dB or less
Players 1 and 2 mix balanced output	
Output level	$+13^{+1.8}_{-2.2}$ dBm
Players 1 and 2 mix unbalanced output	
Output level	2.2 ±0.5 Vrms
Output impedance	1 kΩ or lower
Players 1 and 2 unbalanced digital output	
Output level	0.5 Vp-p (75 Ω)
Players 1 and 2 balanced digital output	
Output level	4.0 Vp-p (110 Ω)

NOTE:

- *The disc magazines are packed separately from the changer body.*
- *Specifications and design are subject to possible modifications without notice, due to improvements.*